PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Attorney Docket No. 05-507-B

In re Application of: Tae Hong Kim	Examiner: TBA
Int'l Application No.: PCT/KR05/000134 U.S. Application No. 10/585,602	Group Art Unit: TBA
International Filing Date: January 14, 2005 U.S. Filing Date: July 11, 2006	Confirmation No.: 8802
For: Apparatus and Method for Dualizing An Asynchronous Transfer Mode (ATM) Router In A CDMA 2000 System	

Mail Stop PCT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION IN SUPPORT OF PETITION UNDER 37 C.F.R. § 1.47(b) BY PERSON HAVING PROPRIETARY INTEREST TO FILE APPLICATION ON BEHALF OF INVENTOR WHO WE HAVE BEEN UNABLE TO LOCATE

Dear Sir:

This Declaration is in support of Petition under 37 C.F.R. § 1.47(b) to allow UTStarcom, Inc. to make the application on behalf of inventor Tae Hong KIM who we have been unable to locate.

1. I, **Jiwon LIM**, am a paralegal at the law firm Kim & Chang.

2. I have first-hand knowledge of the facts recited herein.

3. This Declaration is in support of U.S. Patent Application entitled "APPARATUS AND METHOD FOR DUALIZING AN ASYNCRONOUS TRANSFER MODE (ATM) ROUTER IN A CDMA 2000 SYSTEM," filed in the U.S. Patent Office on July 11, 2006 and bearing U.S Application No. 10/585,602 and International Application No. PCT/KR2005/00134.

4 I am a paralegal at the law firm Kim & Chang, located at Hungkuk Life Insurance Building, 9F, 226 Sinmunno 1-ga, Jongno-gu, Seoul 110-786, Korea.

5. Kim & Chang represents UTStarcom Korea Limited, a subsidiary of UTStarcom, Inc.

6. I am a citizen of Korea, residing at 840-7 Mia-dong, Gangbuk-gu, Seoul 142-820, Republic of Korea.

7. On December 1, 2006 I sent a letter, via content-certified mail, including assignment documents and the Inventor's Declaration of Invention, to Mr. Tae Hong KIM's last known physical address (San 136-1, Ami-ri, Bubal-eub, Icheon-si, Gyeonggi-do 467-860, Republic of Korea). (See attached Exhibit 1).

8. On December 5, 2006, the content-certified package mailed to Mr. KIM was returned because the address was incorrect. (See attached Exhibit 2). I did not attempt to personally visit Mr. KIM's address, as it is the company address of Hyundai Syscomm, Inc.

9. On February 28, 2007, I searched for an e-mail address using the inventor's name and residence identification number in well-known Korean webmail services as well as personal homepage service www.cyworld.co.kr. In order to register for an e-mail address, most of these services require a user to enter his or her full name and residence identification number. These searches resulted in only one complete e-

mail address associated with Mr. KIM's residence identification number, thkim38@hotmail.com. (See attached Exhibit 3).

10. On February 28, 2007, I sent an e-mail, attaching all U.S. application materials (specification, claims, and drawings) to Mr. KIM's email address, thkim38@hotmail.com. (See attached Exhibit 4). I did not receive a response to this e-mail.

11. I attempted to find Mr. KIM's phone number using Korea Information Services (KOIS). The Korea Information Service Corporation (KOIS) is essentially the Korean version of "411" and other directory assistance services. An English version of the website that describes the services that KOIS provides can be found at www.ekois.co/kr/new/eng/main/index.php. (See also attached Exhibit 5). KOIS is the largest and most comprehensive directory service in Korea. KOIS maintains a large database that is searchable for the contact information of listed people and companies. However, much like "411", written confirmation of results is not provided by KOIS, as it is a telephonic service. Korea Information Services confirmed that no number was registered under Mr. KIM's name and his last known address. All efforts to obtain a current address, phone number, or email address, using KOIS have failed to provide new information concerning the whereabouts of Mr. KIM.

12. On May 15, 2007, I sent a reminder e-mail to Mr. KIM, and also offered U.S. $250.00 as compensation for his cooperation in prosecuting this application. (See attached Exhibit 6). I did not receive a response to this e-mail.

13. I believe that I have exhausted all means of contacting Mr. KIM.

14 I hereby declare that all statements made herein are of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful

false statements and the like so made under penalty of perjury and that such willful false statements may jeopardize the validity of the specification or any patent issued thereon.

Respectfully submitted,

Date: June 19, 2007

By: Jiwon Lim

Jiwon LIM
Kim & Chang
Hungkuk Life Insurance Building, 9F.
226 Sinmunno 1-ga, Jongno-gu,
Seoul 110-786, Korea

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Attorney Docket No. 05-507-B

In re Application of: Tae Hong Kim	**Examiner:** TBA
Int'l Application No.: PCT/KR05/000134 **U.S. Application No.** 10/585,602	**Group Art Unit:** TBA
International Filing Date: January 14, 2005 **U.S. Filing Date:** July 11, 2006	**Confirmation No.:** 8802
For: Apparatus and Method for Dualizing An Asynchronous Transfer Mode (ATM) Router In A CDMA 2000 System	

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

STATEMENT ESTABLISHING PROPRIETARY INTEREST BY PERSON SIGNING ON BEHALF OF NONSIGNING INVENTOR AND STATEMENT UNDER 37 C.F.R. § 3.73(B)

UTStarcom, Inc. has a sole proprietary interest in the present application. The invention was originally assigned by inventor to Hyundai Syscomm on November 27, 2002, as part of Hyundai Syscomm's employee invention compensation policy, and was filed as Korean National Application Number 2004-0002973 (Exhibit A). On April 27, 2004, UTStarcom, Inc., through its wholly owned subsidiary in Korea, UTStarcom Korea Limited, acquired Hyundai Syscomm's Intellectual Property Portfolio, including the rights to the above-referenced application, corresponding to Korean National Application Number 2004-0002973 (Exhibit B, page 46 of 46, entry number 1319). I establish this proprietary interest

by attaching a copy of the assignment of this invention by the nonsigning inventor to Hyundai Syscomm, Inc. as recorded with the U.S. Patent and Trademark Office, and a copy of the assignment of this invention by Hyundai Syscomm, Inc. to UTStarcom Korea Limited as recorded in the Patent and Trademark Office (Exhibit B). As such, UTStarcom, Inc. is presently the assignee and owner of the rights to the above-referenced application.

This STATEMENT ESTABLISHING PROPRIETARY INTEREST BY PERSON SIGNING ON BEHALF OF NONSIGNING INVENTOR is made by Robert J. Irvine, III, a person authorized to act on behalf assignee UTStarcom, Inc.

Respectfully submitted,

Date: June 20, 2007

Robert J. Irvine, III
Registration No.: 41,865
McDonnell Boehnen Hulbert & Berghoff LLP
300 South Wacker Drive, Ste. 3100
Chicago, Il 60606
Tel: 312 913 – 0001
Fax: 312 913 – 0002

EXHIBIT A

COPY

UNITED STATES PATENT AND TRADEMARK OFFICE

Facsimile Transmission

To:	Name:	MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
	Company:	300 S. WACKER DRIVE, STE. 3100
	Fax Number:	13129130002
	Voice Phone:	
From:	Name:	ASSIGNMENT SERVICES BRANCH
	Voice Phone:	571-272-3350

37 C.F.R. 1.6 sets forth the types of correspondence that can be communicated to the Patent and Trademark Office via facsimile transmissions. Applicants are advised to use the certificate of facsimile transmission procedures when submitting a reply to a non-final or final Office action by facsimile (37 CFR 1.8(a)).

Fax Notes:

Pg#	Description
1	Cover Page
2	587.TXT
4	Document 1, Batch 957570

USPTO ASSIGNMENT SYSTEM PROCESSING

Date and time of transmission: Tuesday, June 19, 2007 7:58:38 PM
Number of pages including this cover sheet: 05

UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JUNE 18, 2007

PTAS

500298000A

500298000A

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE, STE. 3100
ROBERT J. IRVINE III
CHICAGO, IL 60606

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 571-272-3350. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT SERVICES BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 06/18/2007

REEL/FRAME: 019444/0250
NUMBER OF PAGES: 8

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
DOCKET NUMBER: 05-507-B

ASSIGNOR:
KIM, TAE HONG

DOC DATE: 11/27/2002

ASSIGNEE:
HYUNDAI SYSCOMM, INC.
SAN 136-1, AMI-RI, BUBAL-EUB,
ICHEON-SI
GYEONGGI-DO, REPUBLIC OF KOREA

467-701

SERIAL NUMBER: 10585602

FILING DATE:

PATENT NUMBER;

ISSUE DATE:

TITLE: APPARATUS AND METHOD FOR DUALIZING AN ASYNCHRONOUS TRANSFER MODE (ATM) ROUTER IN A CDMA2000 SYSTEM

019444/0250 PAGE 2

ASSIGNMENT SERVICES BRANCH
PUBLIC RECORDS DIVISION

PATENT ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

06/18/2007
500298000

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE.	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Tae Hong Kim	11/27/2002

RECEIVING PARTY DATA

Name:	Hyundai Syscomm, Inc.
Street Address:	San 136-1, Ami-ri, Bubal-eub, Icheon-si
City:	Gyeonggi-do
State/Country:	KOREA, REPUBLIC OF
Postal Code:	467-701

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	10585602

CORRESPONDENCE DATA

Fax Number: (312)913-0002
Correspondance will be sent via US Mail when the fax attempt is unsuccessful.
Phone: 312-913-0001
Email: docketing@mbhb.com
Correspondent Name: McDonnell Boehnen Hulbert & Berghoff LLP
Address Line 1: 300 S. Wacker Drive, Ste. 3100
Address Line 2: Robert J. Irvine III
Address Line 4: Chicago, ILLINOIS 60606

ATTORNEY DOCKET NUMBER:	05-507-B
NAME OF SUBMITTER:	Robert J. Irvine III

Total Attachments: 6
source=05-507-B-Assign_Inv_to_Hyundai#page1.tif
source=05-507-B-Assign_Inv_to_Hyundai#page2.tif
source=05-507-B-Assign_Inv_to_Hyundai#page3.tif

source=05-507-B-Assign_inv_to_Hyundai#page4.tif
source=05-507-B-Assign_inv_to_Hyundai#page5.tif
source=05-507-B-Assign_inv_to_Hyundai#page6.tif

HYUNDAI SYSCOMM

Confidential

Employee's Declaration of Invention

Date: November 30, 2002

Invention Team	Approval	Work Code		Approving Authority	On-the-job Maintenance Team	Reviewer	Patent Team	Approval	Work Code		Approving Authority
		Primary Inventor	Reviewer	Approved by					Drafter	Reviewer	Approved by
		Signed	-	Signed					signed	signed	signed
	Position / Name	DL/KIM, Tae Hong		CI/JEONG, S.H.		/		Position / Name	SW/LEE, Chun Mi	DL/YOON, Hyoung Jin	
	Date	Nov.27		Nov. 30	Control No.			Date			
	Years in Storage	0, 1, 2, 3, 5, 10, Permanent						Years in Storage	1, 3, 5, 10, P	Security Rating	1, 2, 3, Confidential

Under the provisions of the employee's invention compensation policy, I request to proceed with the filing/registration of my invention and to assign its rights for domestic and international registrations.

Statement by Inventor

Title of the Invention	METHOD FOR MAINTAINING AND DUALIZING A SYSTEM OPERATION
Summary of the Invention	The present invention describes a dualization structure in which information on internal operation status of two ASPA boards included in the ATM router, which is used in a BSC, is maintained identically in all conditions, whether one or both of the boards are utilized.
Name(s) of Related Projects	KTF cdma2000 1x system
Status of the Embodiment	☐ Conception ☐ Completed Design ☑ (In, Completed) Testing ☐ (Preparing, In) Business Implementation
Publication Status of the Invention	☑ Unpublished ☐ Expected to be Published ※ ☐ Published Earlier ※ ※ If checked, please specify the (scheduled) date of publication and related dissertations. ((Scheduled) Date of Publication. Related dissertations:]
Prior Art	Korean Foreign
Filing Term	☑ Standard ☐ Urgent → (Within days)
Reason for Urgent Filing	
Foreign Filing	☐ Yes (Reason) ☑ No
Key Word	SCMB DUALIZATION

Statement by Patent Team

Date of Receipt	November 30, 2002	Agent	Phoenix patent office	Hyundai Syscomm Ref.	CM2002-12-0061
Korean Filing	☑ Patent ☐ Utility Model ☐ Journal of Technical Disclosure ☐ Withhold Filing (Reason)			
	Request for Examination	☐ Yes ☑ No	Strategic Patent Project for the Invention	23
Foreign Filing	☐ Yes ☐ No		Filing Rating	B
	Deliberation	☐ Yes ☐ No	*Remarks for Agents writing the specification*	

Designating Countries to File

☐ Direct National Filing ☐ EPO Filing ☐ PCT Filing

1st Priority		5th Priority	
2nd Priority		6th Priority	
3rd Priority		7th Priority	
4th Priority		8th Priority	
Note			

☐ Domestic filing without Review
☑ Domestic filing after Patent Team Review
☐ Simultaneous Korean & Foreign Filing

Reviewer's Opinion: OK

Statement by Manager of Invention Team

< Evaluation of the Invention>

Category	Contents	Evaluation Grade
Technology	Simple technology	☐ 1 point
	Slightly higher technology	☒ 3 point
	Advanced technology	☐ 5 point
Possible Implementation	Theoretically possible to implement, but has no plan for testing	☐ 1 point
	Developments in related technologies are required first for testing	☐ 2 point
	Currently testing or planning to test	☐ 3 point
	Tested and obtained satisfactory results (Attach Documents)	☐ 5 point
	Preparing or currently implementing into one's business	☒ 7 point
Effects	What is the level of improvement? (Simplification of processes, yield, cost etc.)	☐ 3 ☒ 2 ☐ 1 point
Importance	Defending the rights in disclosing the technology	☐ 1 point
	Adaptable (or scheduled) for mass production	☒ 3 point
	Absolutely necessary to obtain exclusive technology	☐ 5 point
Evaluation Result		(15)Point

Note: ※ The Invention Evaluation form must be filled out by the manager of the invention team.
※ Evidence is necessary for those inventions that are rated 5 or 7 points in the section of "Possibility for Implementation."
※ The Evaluation Result should be filled in only after completing the Evaluation.

<Evaluation for Foreign Filing>

Status of products to which the invention was applied	* Applied Product:	* For cases applied to multiple products, list all product names. For future cases to be applied, mark the estimated period.
	* Related Technology:	
	* Applied Period:	
Evaluation	☐ Absolutely necessary ☐ Observe for a year after filing domestically ☐ Not necessary	Designation of Countries
	☐ Direct National Filing ☐ EPO Filing ☐ PCT Filing	1st Priority / 2nd Priority / 3rd Priority / 4th Priority / 5th Priority / 6th Priority / 7th Priority / 8th Priority
	Technological Factor	Evaluator
	Economical Factor	Name: Position: Signature:

DOC.5-6(Translation)

Inventor Information	Primary Inventor	Name	(Korean) 김 태 홍	(S/W) Development Group (Network) Team				
			(Chinese) 金 兌 洪	Position	DL	Employee ID No.	H14933	Tel (6907)
			(English) Kim Tae Hong	Residence ID	690404-1005822			
		E-mail	taehong@hysyscomm com	Address	San 136-1, Ami-ri, Bubal-eub, Icheon-si, Gyeonggi-do 467-701	Signature	*signed*	
	Joint Inventor	Name	(Korean)	( ) Development Group ( ) Team				
			(Chinese)	Position		Employee ID No.		Tel ( )
			(English)	Residence ID	-			%
		E-mail		Address		Signature		
		Name	(Korean)	( ) Development Group ( ) Team				
			(Chinese)	Position		Employee ID No.		Tel ( )
			(English)	Residence ID				%
		E-mail		Address		Signature		
		Name	(Korean)	( ) Development Group ( ) Team				
			(Chinese)	Position		Employee ID No.		Tel ( )
			(English)	Residence ID				%
		E-mail		Address		Signature		
		Name	(Korean)	( ) Development Group ( ) Team				
			(Chinese)	Position		Employee ID No.		Tel ( )
			(English)	Residence ID				%
		E-mail		Address		Signature		
		Name	(Korean)	( ) Development Group ( ) Team				
			(Chinese)	Position		Employee ID No.		Tel ( )
			(English)	Residence ID				%
		E-mail		Address		Signature		

Note: 1. The full address and e-mail address are required.
2 Write the full name in English.

DOC.5-1

社 外 秘

직무 발명 신고서

신고일 : 2002년 11 월 30일

발명실	결재	업무코드		승인권자	현장관리자	검토	법제특허부	결재	업무코드		승인권자
		주발명자	검토	팀장					기안	검토	승인
		(signature)		(signature)					(signature)	(signature)	(signature)
	직위/성명	대/김태홍	/	CJ/장성현		/		직위/성명	이종원		/
	일자	11월27일	/	11/30	관리번호			일자			
	보존년한	0 1 2 3 5 10 영구						보존년한	1.3.5.10.영구	보안등급	1.2.3 대외비

사내 직무발명보상기준에 의거하여 출원/등록을 의뢰하며, 국내/외 등록권리를 양도합니다.

발명자 기재사항	발명의 명칭	시스템운용상태유지 및 이중화
	발명의 개요	BSC에 이용되는 ATM router(ASB)를 구성하는 두장의 ASPA board의 운용정보를 어떠한 경우(두장다 동작, 한장만 동작)에도 항상 내부 운용상태정보를 동일하게 유지하는 이중화 구조이다.
	관련PROJECT명	KTF cdma2000 1x 시스템
	실시상황	□ 착상 □ 설계완료 ■ 시험(중,완료) □ 사업화(준비중,실시중)
	본발명의 발표상황	■ 미발표 □ 발표예정 □ 既발표 ※既발표 또는 발표 예정인 경우 발표(예정)일과 관련논문등 기입 요망 [발표(예정)일 '2000년 월 일, 관련논문:]
	선행특허자료	국내:
		외국:
	출원완급	■ 보통 □ 지급-->(일이내) / 지급출원 이유:
	외국출원	□ 유 (이유:) ■ 무
	KEY WORD	SCMB이중화

법제특허부 기재사항	접수일	2002년 11 월 30일	대리인	Tai Lyc	전담자관리번호: CM2002-12-0061
	국내출원	☑ 특허 □ 실용 □ 공개기보 □ 출원보류(이유:)			
		심사청구	□ 유 ☑ 무	전략특허PROJECT명	
	외국출원	□ 유 □ 무		출원등급	B
		심의여부	□ 유 □ 무	*대리인 특허명세서작성 참조사항*	
	출원국가선정	□ 개별국출원 □ EPO출원 □ PCT출원		□ 사무소 자체 국내출원 ☑ 특허팀검토후 국내출원 □ 국내외 동시출원	
		1순위	5순위	검토의견	OK
		2순위	6순위		
		3순위	7순위		
		4순위	8순위		
		비고			

社 外 秘

발명실장 기재사항

< 발명 평가내용 >

구 분	내 용	평가점수
기 술 성	단순 조합 기술임	□ 1점
	약간 높은 수준을 요하는 기술임	☑ 3점
	고도의 수준을 요하는 기술임	□ 5점
실현가능성	이론상 실현은 가능하나, 실험계획은 없음	□ 1점
	테스트 하려면 관련기술의 발전이 요구됨	□ 2점
	테스트중이거나 예정임	□ 3점
	양호한 테스트 결과 얻음(자료첨부 가능)	□ 5점
	현재 사업화 준비중 또는 실시중임	☑ 7점
효 과	개선된 효과의 수준은? (공정 단순화, Yield, Cost 등의 측면)	□ 3점 ☑ 2점 □ 1점
발명품요도	기술공개로 타사 권리확보를 방어하는 수준임	□ 1점
	양산에 적용(예정) 가능한 발명임	☑ 3점
	반드시 필요한 독점 기술임	□ 5점
평가결과		(15) 점

주) ※상기 발명 평가표는 반드시 실장이 직접 기재하시기 바랍니다.
※"실현가능성"란에서 5점,7점에 해당된 발명은 증빙 자료가 반드시 필요 합니다.
※평가를 완료하신후 평가결과를 기입 바랍니다.

< 외국출원 평가내용 >

발명의 적용제품 현 황	*적용제품:	*복수제품에 적용되는 경우 전부 기재하시기 바라며, 향후 적용 제품경우 예상시점을 기재요망
	*관련기술:	
	*적용시기:	
평가내용	□ 절대 필요 □ 국내출원후 1년간 관망 □ 필요 없음	출원희망국가
	□ 개별국출원, □ EPO출원, □ PCT출원	1순위 / 2순위 / 3순위
	기술적측면	4순위 / 5순위 / 6순위 / 7순위 / 8순위
	경제적측면	평가자 성명: 직위: 서명:

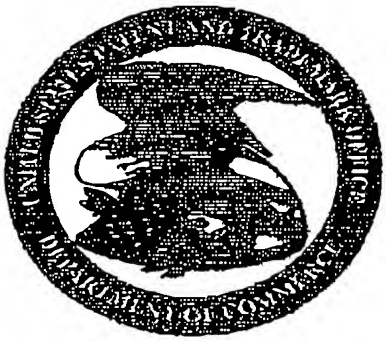
DOC.5-S

社外秘

발명자 인적사항								
발명자 1	성명	(한글) 김 태 홍	(S/W) 개발 Group	(네트웍)실				
		(한문) 金 兌 洪	직위	대리	사번	H14933	TEL (6907)	
		(영문) Kim Tae Hong	주민등록No	690404-1005822				
	E-mail	taehong@hysyscomm.com	주소	(467-701)경기도 이천시 부발읍 아미리 산136-1		서 명		
발명자 2	성명	(한글)	( ) 개발 Group	( )실				
		(한문)	직위		사번		TEL ( )	
		(영문)	주민등록No	-				
	E-mail		주소	(-)		서 명		
발명자 3	성명	(한글)	( ) 개발 Group	( )실				
		(한문)	직위		사번		TEL ( )	
		(영문)	주민등록No	-				
	E-mail		주소	(-)		서 명		
발명자 4	성명	(한글)	( ) 개발 Group	( )실				
		(한문)	직위		사번		TEL ( )	
		(영문)	주민등록No	-				
	E-mail		주소	(-)		서 명		
발명자 5	성명	(한글)	( ) 개발 Group	( )실				
		(한문)	직위		사번		TEL ( )	
		(영문)	주민등록No	-				
	E-mail		주소	(-)		서 명		
발명자 6	성명	(한글)	( ) 개발 Group	( )실				
		(한문)	직위		사번		TEL ( )	
		(영문)	주민등록No	-				
	E-mail		주소	(-)		서 명		

㈜1. 주소는 상세히 기재하시고, E-mail은 반드시 *회사계정*으로 기재하시기 바람.
2. 영문기재시 Fullname을 기재하시기 바람.

EXHIBIT B



COPY

UNITED STATES PATENT AND TRADEMARK OFFICE

Facsimile Transmission

To:	Name:	MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
	Company:	300 S. WACKER DRIVE, STE. 3100
	Fax Number:	13129130002
	Voice Phone:	
From:	Name:	ASSIGNMENT SERVICES BRANCH
	Voice Phone:	571-272-3350

37 C.F.R. 1.6 sets forth the types of correspondence that can be communicated to the Patent and Trademark Office via facsimile transmissions. Applicants are advised to use the certificate of facsimile transmission procedures when submitting a reply to a non-final or final Office action by facsimile (37 CFR 1.8(a)).

Fax Notes:

Pg#	Description
1	Cover Page
2	607.TXT
4	Document 1, Batch 957573

USPTO ASSIGNMENT SYSTEM PROCESSING

Date and time of transmission: Tuesday, June 19, 2007 8 00:22 PM
Number of pages including this cover sheet: 05

UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

JUNE 18, 2007

PTAS

500298003A

500298003A

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 S. WACKER DRIVE, STE. 3100
ROBERT J. IRVINE III
CHICAGO, IL 60606

UNITED STATES PATENT AND TRADEMARK OFFICE
NOTICE OF RECORDATION OF ASSIGNMENT DOCUMENT

THE ENCLOSED DOCUMENT HAS BEEN RECORDED BY THE ASSIGNMENT DIVISION OF THE U.S. PATENT AND TRADEMARK OFFICE. A COMPLETE MICROFILM COPY IS AVAILABLE AT THE ASSIGNMENT SEARCH ROOM ON THE REEL AND FRAME NUMBER REFERENCED BELOW.

PLEASE REVIEW ALL INFORMATION CONTAINED ON THIS NOTICE. THE INFORMATION CONTAINED ON THIS RECORDATION NOTICE REFLECTS THE DATA PRESENT IN THE PATENT AND TRADEMARK ASSIGNMENT SYSTEM. IF YOU SHOULD FIND ANY ERRORS OR HAVE QUESTIONS CONCERNING THIS NOTICE, YOU MAY CONTACT THE EMPLOYEE WHOSE NAME APPEARS ON THIS NOTICE AT 571-272-3350. PLEASE SEND REQUEST FOR CORRECTION TO: U.S. PATENT AND TRADEMARK OFFICE, MAIL STOP: ASSIGNMENT SERVICES BRANCH, P.O. BOX 1450, ALEXANDRIA, VA 22313.

RECORDATION DATE: 06/18/2007

REEL/FRAME: 019444/0262
NUMBER OF PAGES: 51

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
DOCKET NUMBER: 05-507-B

ASSIGNOR:
HYUNDAI SYSCOMM, INC.

DOC DATE: 04/27/2004

ASSIGNEE:
UTSTARCOM KOREA LIMITED
SAN 136-1, AMI-RI, BUBAL-EUB,
ICHEON-SI
KYONGKI-DO, REPUBLIC OF KOREA

467-701

SERIAL NUMBER: 10585602
PATENT NUMBER:

FILING DATE:
ISSUE DATE:

TITLE: APPARATUS AND METHOD FOR DUALIZING AN ASYNCHRONOUS TRANSFER MODE (ATM) ROUTER IN A CDMA2000 SYSTEM

019444/0262 PAGE 2

ASSIGNMENT SERVICES BRANCH
PUBLIC RECORDS DIVISION

PATENT ASSIGNMENT

Electronic Version v1.1
Stylesheet Version v1.1

06/18/2007
500298003

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
Hyundai Syscomm, Inc.	04/27/2004

RECEIVING PARTY DATA

Name:	UTStarcom Korea Limited
Street Address:	San 136-1, Ami-ri, Bubal-eub, Icheon-si
City:	Kyongki-do
State/Country:	KOREA, REPUBLIC OF
Postal Code:	467-701

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	10585602

CORRESPONDENCE DATA

Fax Number: (312)913-0002
Correspondence will be sent via US Mail when the fax attempt is unsuccessful.
Phone: 312-913-0001
Email: docketing@mbhb.com
Correspondent Name: McDonnell Boehnen Hulbert & Berghoff LLP
Address Line 1: 300 S. Wacker Drive, Ste. 3100
Address Line 2: Robert J. Irvine III
Address Line 4: Chicago, ILLINOIS 60606

ATTORNEY DOCKET NUMBER:	05-507-B
NAME OF SUBMITTER:	Robert J. Irvine III

Total Attachments: 49
source=05-500-B-Hyundai_to_UTStarcom_Assignment#page1.tif
source=05-500-B-Hyundai_to_UTStarcom_Assignment#page2.tif
source=05-500-B-Hyundai_to_UTStarcom_Assignment#page3.tif

ONNELL BOEHNEN HULBERT & BERGHOFF LLP COMPANY: 300 W. WACKER DRIVE, SUI.

ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page4.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page5.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page6.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page7.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page8.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page9.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page10.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page11.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page12.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page13.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page14.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page15.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page16.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page17.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page18.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page19.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page20.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page21.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page22.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page23.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page24.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page25.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page26.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page27.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page28.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page29.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page30.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page31.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page32.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page33.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page34.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page35.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page36.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page37.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page38.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page39.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page40.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page41.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page42.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page43.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page44.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page45.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page46.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page47.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page48.tif
ource=05-500-B-Hyundai_to_UTStarcom_Assignment#page49.tif

〔제41호서식〕

공증인가 법무법인 대종종합법률사무소

서울 · 종로구 당주동 160
(변호사회관 303호)
〔공증우 736-6604〕

Registered No. 2004 - 6060

NOTARIAL CERTIFICATE

DAE JONG LEGAL CORPORATION

160, Dang Joo-Dong, Jong Ro-Ku,
Seoul, Korea

23230-05711월
90.11.26 승인

210㎜ × 297㎜(옥금) 70g/㎡

KIM & CHANG

Hannuri Building, 219 Naeja-dong, Jongno-gu, Seoul 110-053, Korea
Telephone: (822) 764-8855 / 2122-3900 Fax: (822) 741-0328 / 745-5954 / 763-7434
E-Mail: all@ip.kimchang.com

DECLARATION

I, the undersigned, hereby declare:

(1) That my name, mailing address and citizenship are as stated below;

(2) That I am knowledgeable in both English and Korean, which are the languages used in relation to the Assignment filed with the Korean Intellectual Property Office; and

(3) That I have translated said Assignment filed with the Korean Intellectual Property Office into English, a copy of which is attached hereto, and believe that said translation is a true and complete translation of the aforementioned Korean Assignment.

22nd day of November, 2004

Full name of the translator : LIM, Ji Won

Signature of the translator : _____

Mailing address : c/o Kim & Chang, Hannuri Building, 219 Naeja-dong, Jongno-gu, Seoul 110-053, Korea, Republic of Korea

Citizenship : Republic of Korea

KIM & CHANG
[Translation]

ASSIGNMENT

By this instrument, HYUNDAI SYSCOMM, INC., a corporation duly organized and existing under the Laws of Republic of Korea at San 136-1, Ami-ri, Bubal-eub, Icheon-si, Gyeonggi-do 467-701, Republic of Korea do hereby declare that on April 27, 2004 it has assigned and transferred all rights, title and interest in the cases as listed in the attached Schedule I to UTStarcom Korea Limited, a corporation duly organized and existing under the laws of Republic of Korea at San 136-1, Ami-ri, Bubal-eub, Icheon-si, Kyongki-do 467-701, Republic of Korea

IN WITNESS WHEREOF,

I have set my hand hereto this 27th day of April, 2004.

Assignor: HYUNDAI SYSCOMM INC.

By: (SEALED)

Typed Name: SEONG-IK JANG

Position: CEO & President

Schedule 1

No.	Korean Patent Application No.
1	1996009524
2	1996025985
3	1997007238
4	1997013781
5	1997055585
6	1997055586
7	1997055587
8	1997055588
9	1997060536
10	1997063413
11	1997066033
12	1998004816
13	1998005339
14	1998005341
15	1998005342
16	1998005746
17	1998005748
18	1998005750
19	1998005754
20	1998005756
21	1998005757
22	1998005758
23	1998005759
24	1998005760
25	1998005761
26	1998009741
27	1998009742
28	1998009743
29	1998009744

30	1998009746
31	1998009974
32	1998010163
33	1998010164
34	1998010165
35	1998010166
36	1998010167
37	1998012081
38	1998012281
39	1998013082
40	1998013455
41	1998013793
42	1998013794
43	1998014157
44	1998015007
45	1998015227
46	1998015630
47	1998018666
48	1998018667
49	1998018668
50	1998018669
51	1998018670
52	1998018843
53	1998019773
54	1998019774
55	1998019775
56	1998019968
57	1998027638
58	1998027948

59	1998027958
60	1998028181
61	1998028183
62	1998028375
63	1998033895
64	1998034730
65	1998034816
66	1998034817
67	1998034818
68	1998034819
69	1998034820
70	1998035083
71	1998037282
72	1998037283
73	1998037284
74	1998042230
75	1998042231
76	1998042233
77	1998042234
78	1998042235
79	1998042236
80	1998042241
81	1998042243
82	1998042245
83	1998042247
84	1998042250
85	1998045932
86	1998045933
87	1998045937

Schedule 1

No.	Korean Patent Application No.
88	1998045938
89	1998048377
90	1998049581
91	1998049584
92	1998052873
93	1998052874
94	1998052875
95	1998052876
96	1998052877
97	1998052878
98	1998052879
99	1998052880
100	1998053384
101	1998055233
102	1998055234
103	1998055238
104	1998055476
105	1998055477
106	1998055478
107	1998055479
108	1998055480
109	1998055481
110	1998055483
111	1998055484
112	1998055487
113	1998057133
114	1998057134
115	1998057486
116	1998059846

117	1998059850
118	1998059854
119	1998059855
120	1998059856
121	1998059859
122	1998059860
123	1998061658
124	1998061659
125	1998061660
126	1998061661
127	1998061667
128	1998061669
129	1998061670
130	1998061766
131	1998061767
132	1998061768
133	1998062159
134	1998062160
135	1998062161
136	1998062163
137	1998062164
138	1998062165
139	1998062166
140	1998062167
141	1998062185
142	1998062190
143	1998062191
144	1998062198
145	1998062199

Schedule 1

No.	Korean Patent Application No.
146	1998062203
147	1998062207
148	1998062779
149	1998062780
150	1998062781
151	1998062783
152	1998062784
153	1998062785
154	1998062787
155	1998062788
156	1998062790
157	1998062792
158	1998062794
159	1998062795
160	1998062796
161	1998062798
162	1998062799
163	1998062800
164	1998062801
165	1998062805
166	1998062806
167	1998062807
168	1998062809
169	1998062811
170	1998062812
171	1998062813
172	1999000293
173	1999000295
174	1999000296

175	1999000297
176	1999000326
177	1999000706
178	1999000707
179	1999000708
180	1999001604
181	1999001609
182	1999003974
183	1999003975
184	1999003977
185	1999004841
186	1999005536
187	1999006956
188	1999006957
189	1999007125
190	1999007561
191	1999008368
192	1999008369
193	1999008370
194	1999008372
195	1999008373
196	1999008548
197	1999009664
198	1999009665
199	1999009666
200	1999009667
201	1999009668
202	1999009669
203	1999009670

204	1999009725
205	1999009727
206	1999009766
207	1999009769
208	1999009771
209	1999009890
210	1999009892
211	1999009893
212	1999009894
213	1999010187
214	1999010192
215	1999010193
216	1999010593
217	1999011565
218	1999011566
219	1999011567
220	1999011568
221	1999011569
222	1999012646
223	1999012647
224	1999012694
225	1999012845
226	1999012847
227	1999012850
228	1999013025
229	1999013026
230	1999013027
231	1999013030
232	1999013083

233	1999013512
234	1999013515
235	1999015234
236	1999015235
237	1999015236
238	1999015237
239	1999015238
240	1999017263
241	1999017344
242	1999017345
243	1999017346
244	1999017582
245	1999017583
246	1999017584
247	1999017665
248	1999017666
249	1999022339
250	1999022340
251	1999022341
252	1999022342
253	1999022344
254	1999022345
255	1999022346
256	1999022348
257	1999023244
258	1999023245
259	1999023246
260	1999023247
261	1999023248

262	1999023250
263	1999023252
264	1999023253
265	1999023254
266	1999023468
267	1999023469
268	1999023493
269	1999023494
270	1999023495
271	1999023496
272	1999026627
273	1999026628
274	1999026630
275	1999026631
276	1999026632
277	1999026879
278	1999027896
279	1999029121
280	1999029122
281	1999029556
282	1999029557
283	1999029614
284	1999029615
285	1999029616
286	1999029617
287	1999029618
288	1999030070
289	1999030166
290	1999030927

291	1999030928
292	1999033686
293	1999034098
294	1999035184
295	1999035185
296	1999035405
297	1999035876
298	1999036626
299	1999036627
300	1999036628
301	1999036629
302	1999036630
303	1999036631
304	1999036632
305	1999036633
306	1999036634
307	1999036635
308	1999036636
309	1999036637
310	1999036639
311	1999036640
312	1999036679
313	1999036681
314	1999036683
315	1999036684
316	1999036685
317	1999036686
318	1999036687
319	1999036691

320	1999036851
321	1999037135
322	1999037136
323	1999037273
324	1999037274
325	1999037275
326	1999037276
327	1999037277
328	1999037278
329	1999037683
330	1999037684
331	1999037830
332	1999037881
333	1999037882
334	1999037883
335	1999037908
336	1999038031
337	1999038032
338	1999038860
339	1999039035
340	1999039036
341	1999039037
342	1999039087
343	1999039088
344	1999039089
345	1999039090
346	1999039091
347	1999039092
348	1999039093

349	1999039094
350	1999039095
351	1999039433
352	1999040092
353	1999040093
354	1999040094
355	1999040162
356	1999040165
357	1999040166
358	1999040991
359	1999042340
360	1999042341
361	1999042342
362	1999042343
363	1999042344
364	1999042345
365	1999042858
366	1999042859
367	1999042860
368	1999042861
369	1999044287
370	1999044288
371	1999044289
372	1999044290
373	1999045391
374	1999045883
375	1999046999
376	1999047168
377	1999047169

378	1999047170
379	1999047171
380	1999047172
381	1999047173
382	1999047174
383	1999047175
384	1999047176
385	1999047177
386	1999047179
387	1999047180
388	1999047181
389	1999047182
390	1999047186
391	1999047967
392	1999047977
393	1999047978
394	1999048512
395	1999048513
396	1999049737
397	1999049738
398	1999049739
399	1999049740
400	1999049928
401	1999049929
402	1999049930
403	1999050402
404	1999050403
405	1999050870
406	1999051355

407	1999052678
408	1999052679
409	1999052680
410	1999052681
411	1999052763
412	1999052764
413	1999052765
414	1999053030
415	1999053031
416	1999053033
417	1999053034
418	1999053035
419	1999053039
420	1999053179
421	1999053418
422	1999055154
423	1999055155
424	1999055156
425	1999055157
426	1999055219
427	1999055221
428	1999055222
429	1999055225
430	1999055226
431	1999055487
432	1999055531
433	1999055532
434	1999055533
435	1999056165

436	1999056226
437	1999056227
438	1999056228
439	1999056610
440	1999056611
441	1999056612
442	1999056613
443	1999056614
444	1999056923
445	1999057757
446	1999058229
447	1999058230
448	1999058231
449	1999059398
450	1999059399
451	1999059710
452	1999059834
453	1999060260
454	1999060263
455	1999060456
456	1999060458
457	1999060460
458	1999060461
459	1999061100
460	1999061103
461	1999061700
462	1999061745
463	1999061746
464	1999061747

465	1999062120
466	1999062778
467	1999063735
468	1999066217
469	1999066218
470	1999066219
471	1999066223
472	1999066224
473	1999066225
474	1999066347
475	1999066348
476	1999066349
477	1999066350
478	1999066351
479	1999067483
480	1999067484
481	1999067485
482	1999067489
483	1999067492
484	1999067495
485	2000001727
486	2000002884
487	2000003097
488	2000003380
489	2000004807
490	2000004808
491	2000005183
492	2000005810
493	2000005940

494	2000005942
495	2000005984
496	2000005985
497	2000005986
498	2000005987
499	2000005988
500	2000005989
501	2000005990
502	2000008064
503	2000008267
504	2000008268
505	2000008269
506	2000008270
507	2000008271
508	2000008272
509	2000008273
510	2000008274
511	2000008432
512	2000008433
513	2000008434
514	2000008435
515	2000008436
516	2000008976
517	2000008977
518	2000008978
519	2000008979
520	2000008980
521	2000009019
522	2000009193

523	2000009600
524	2000009604
525	2000009605
526	2000010121
527	2000010463
528	2000010470
529	2000010471
530	2000010473
531	2000010687
532	2000011289
533	2000011454
534	2000011455
535	2000011752
536	2000012235
537	2000012439
538	2000012440
539	2000012441
540	2000012442
541	2000012443
542	2000012554
543	2000012555
544	2000012557
545	2000014280
546	2000014315
547	2000016016
548	2000016017
549	2000016022
550	2000016024
551	2000016025

552	2000016026
553	2000016027
554	2000016029
555	2000016032
556	2000016033
557	2000016034
558	2000016575
559	2000016578
560	2000016579
561	2000016651
562	2000016948
563	2000016949
564	2000017609
565	2000018586
566	2000018646
567	2000021229
568	2000021231
569	2000021278
570	2000021423
571	2000021425
572	2000021426
573	2000021455
574	2000021926
575	2000022265
576	2000022266
577	2000022267
578	2000022268
579	2000022269
580	2000022550

581	2000022551
582	2000022553
583	2000022554
584	2000022555
585	2000022900
586	2000022902
587	2000022909
588	2000022911
589	2000024687
590	2000024688
591	2000025016
592	2000025018
593	2000025019
594	2000025966
595	2000026433
596	2000026434
597	2000026661
598	2000026662
599	2000027032
600	2000027034
601	2000028287
602	2000028383
603	2000030625
604	2000030627
605	2000032355
606	2000032356
607	2000032357
608	2000034111
609	2000034535

610	2000034536
611	2000035273
612	2000035276
613	2000035453
614	2000035455
615	2000035456
616	2000037914
617	2000038323
618	2000038325
619	2000038326
620	2000042357
621	2000042767
622	2000042768
623	2000044110
624	2000047430
625	2000047844
626	2000051257
627	2000051981
628	2000051982
629	2000051986
630	2000052486
631	2000052487
632	2000052509
633	2000052513
634	2000053506
635	2000055647
636	2000055739
637	2000055740
638	2000056181

639	2000056182
640	2000056183
641	2000056184
642	2000059971
643	2000059972
644	2000059973
645	2000059974
646	2000060365
647	2000063612
648	2000063613
649	2000063614
650	2000063615
651	2000064919
652	2000064920
653	2000064921
654	2000064922
655	2000064923
656	2000064924
657	2000064928
658	2000064929
659	2000064930
660	2000064932
661	2000065109
662	2000065913
663	2000065914
664	2000065915
665	2000065920
666	2000066034
667	2000066091

668	2000066092
669	2000066218
670	2000067638
671	2000067805
672	2000067806
673	2000067807
674	2000067808
675	2000067809
676	2000067811
677	2000071224
678	2000073770
679	2000073771
680	2000074210
681	2000074211
682	2000074212
683	2000074213
684	2000074214
685	2000074215
686	2000074216
687	2000074658
688	2000074661
689	2000076897
690	2000080376
691	2000081200
692	2000081201
693	2000081203
694	2000081204
695	2000082218
696	2000082220

697	2000082221
698	2000082222
699	2000082225
700	2000082227
701	2000082228
702	2000082229
703	2000082230
704	2000082231
705	2000082232
706	2000082233
707	2000082494
708	2000082495
709	2000082496
710	2000082497
711	2000082498
712	2000082896
713	2000082897
714	2000082901
715	2000082903
716	2000084648
717	2000084649
718	2000084650
719	2000084652
720	2000084655
721	2000084656
722	2000084658
723	2000084659
724	2000084660
725	2000085086

726	2000085087
727	2000085094
728	2000085096
729	2000085098
730	2000085099
731	2000085100
732	2000085101
733	2000085102
734	2000086505
735	2000086506
736	2000086514
737	2000086519
738	2000086526
739	2000087469
740	2000087470
741	2000087479
742	2000087483
743	2000087560
744	2000087565
745	2000087566
746	2000087567
747	2000087569
748	2000087592
749	2000087596
750	2000087597
751	2001000043
752	2001002658
753	2001002659
754	2001002660

755	2001002661
756	2001002662
757	2001002663
758	2001002664
759	2001002665
760	2001002666
761	2001002871
762	2001003475
763	2001003476
764	2001003477
765	2001003478
766	2001003609
767	2001004858
768	2001006576
769	2001006601
770	2001007529
771	2001007573
772	2001007574
773	2001007575
774	2001007576
775	2001007577
776	2001007721
777	2001008984
778	2001009904
779	2001010768
780	2001011610
781	2001011611
782	2001014395
783	2001014929

1/2

Fig. 1

(Prior Art)

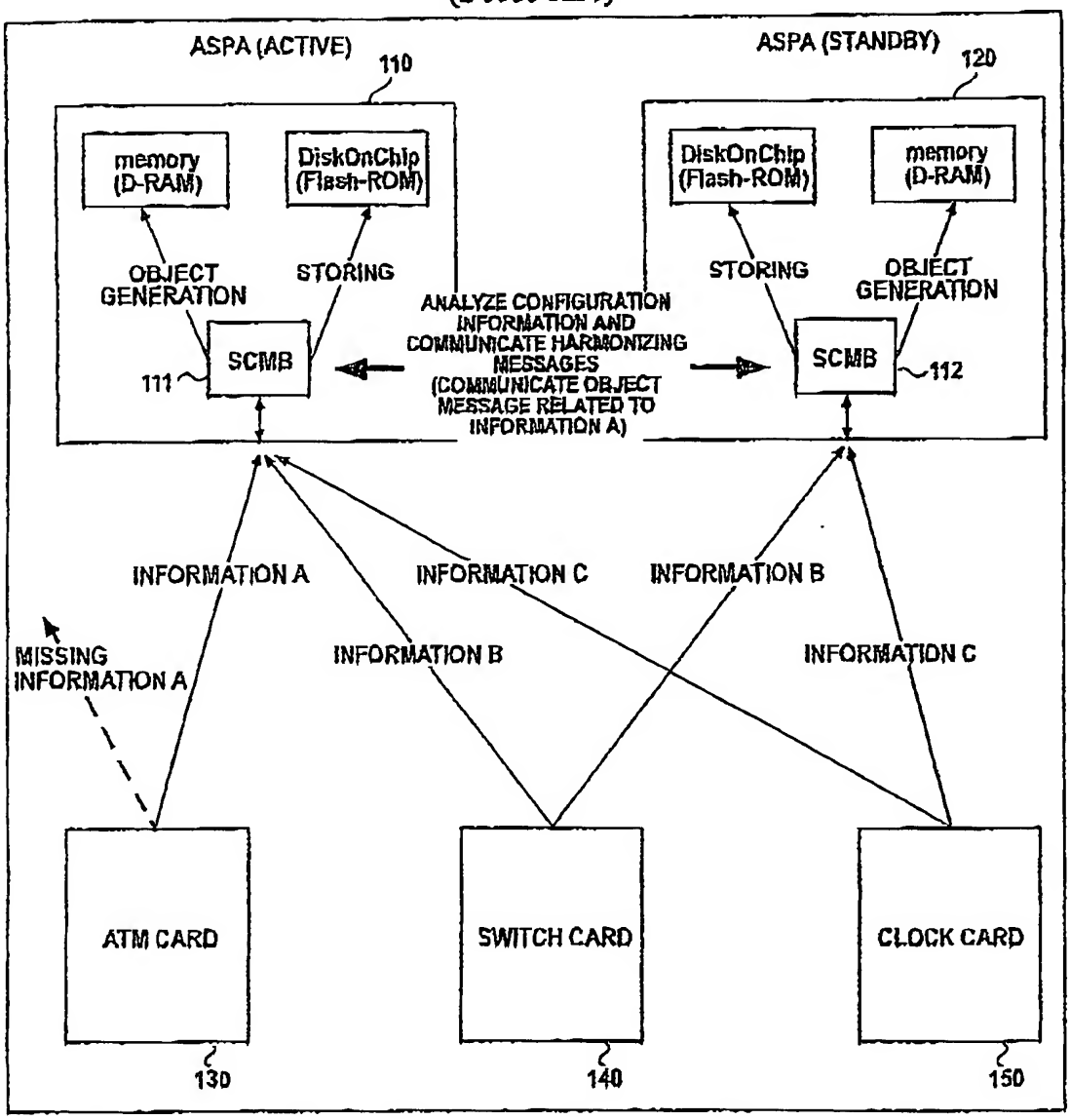


Fig. 2

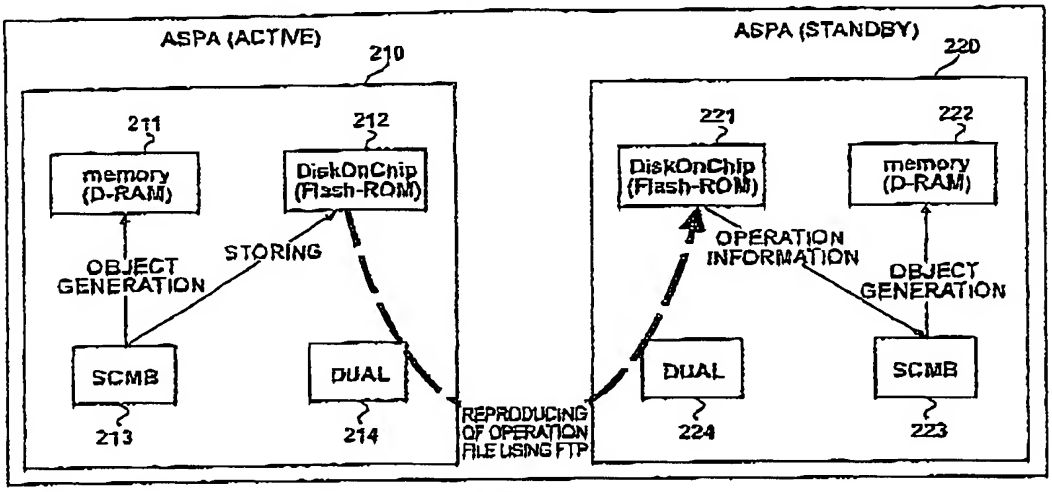

ASPA (ACTIVE)
210
ASPA (STANDBY)
220
211
memory (D-RAM)
212
DiskOnChip (Flash-ROM)
221
DiskOnChip (Flash-ROM)
222
memory (D-RAM)
STORING
OBJECT GENERATION
OPERATION INFORMATION
OBJECT GENERATION
SCMB
213
DUAL
214
REPRODUCING OF OPERATION FILE USING FTP
DUAL
224
SCMB
223

Fig. 3

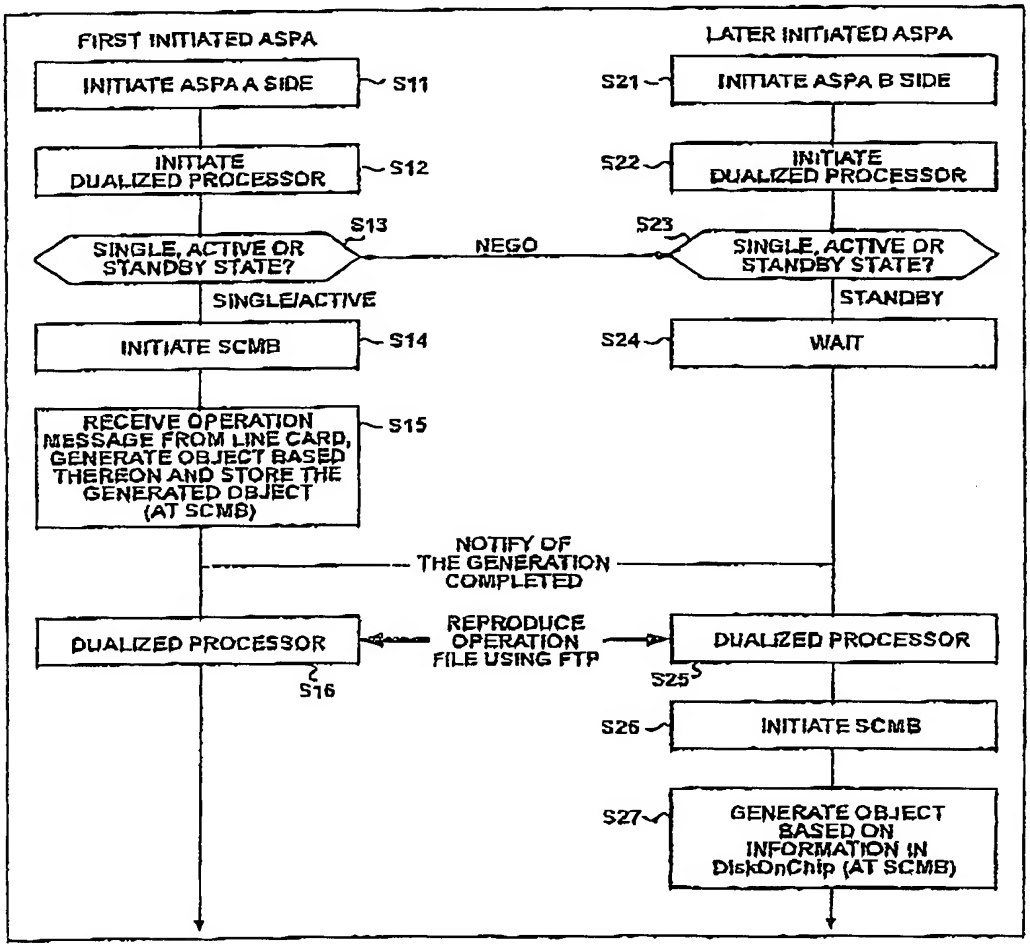

FIRST INITIATED ASPA
LATER INITIATED ASPA
INITIATE ASPA A SIDE
S11
S21
INITIATE ASPA B SIDE
INITIATE DUALIZED PROCESSOR
S12
S22
INITIATE DUALIZED PROCESSOR
S13
S23
SINGLE, ACTIVE OR STANDBY STATE?
NEGO
SINGLE, ACTIVE OR STANDBY STATE?
SINGLE/ACTIVE
STANDBY
INITIATE SCMB
S14
S24
WAIT
RECEIVE OPERATION MESSAGE FROM LINE CARD, GENERATE OBJECT BASED THEREON AND STORE THE GENERATED OBJECT (AT SCMB)
S15
NOTIFY OF THE GENERATION COMPLETED
DUALIZED PROCESSOR
REPRODUCE OPERATION FILE USING FTP
DUALIZED PROCESSOR
S16
S25
S26
INITIATE SCMB
S27
GENERATE OBJECT BASED ON INFORMATION IN DiskOnChip (AT SCMB)

EXHIBIT 5

KOIS

Korea Information Service

Seventy years of the directory
Assistance Service
will care on as the better public secretary

KOIS Company Info

KOIS Company
Overview

KOIS CEO'S
Message

KOIS
Vision

KOIS Product Info

- Directory Assistance Service
- Priority Directory Assistance Service
- Ad while Awaiting
- Call Center Consulting
- nice114
- Process Application to Subscribe KT Product
- Contrast Number DB Service

KOIS InvestRelation

200-16 Sungsan-Dong, Mapo-Gu, Seoul, 110-522, Korea

Korea Information Service
Product

Nice114

Nice114 Info

Service Overview

The KT 114 phone number voice assistance service is provided through wired/wireless Internet whereby phone numbers and map information can be obtained by entering business names, business categories, names of people, or the keyword of services, and is the nation's best regional portal Internet service providing useful everyday life information.

NICE114.CO.KR
전화번호와 지도가 한눈에

- Website Address : www.nice114.co.kr

Service Types

Precise Phone Number Search

- precision and speed of the KT phone number DB! Phone number search service.
  new data updated twice daily based on the nation's largest KT phone number DB.

Integrated Search

- one click! Integrated search service.
  nice priority information, business name information, business category information, life information numbers (080, 15xx, 700, public complaints, phone number changes) simultaneous search.

Precise Map

- powerful nice 14 map search service

Search

map search service providing 2D/3D maps together with shortest distance directory assistance.

My Hall

- My smart service
  various personal services provided such as schedule management, address book, memo pad, scrap book etc.

Community Service

- only the essential information collected
  provision of a community area where members can directly post/obtain essential information arranged in themed categories.

A variety of everyday life information services

- zip code search & subway station search (connecting line information)
- weather information service, accommodation search & reservations
- various document forms & legal information, lost children search service
- other contents to be continuously gained and provided

Close area search service (our neighborhood selection)

- service providing everyday life information for areas of interest by the user selecting a specific area

Service Inquiry

- Tel : 02-2235-0385
- Make Inquiry (Direct to Inquiry)

200-16 Sungin2-Dong, Jongno-Gu, Seoul, 110-522, Korea

TOP

Korea Information Service

Product

Directory Assistance Service

Basic Service

Service Overview

A service which searches and provides phone numbers when customers dial '114' and request the phone number of a subscriber with a specific category or business name (or person's name).

How to use

- Standard Phone : Dial '114' or 'Area Code + 114'
- Public Pay Phone : After inserting 100 won, dial '114' or 'Area Code + 114'
- Cellular Phone & PCS : Dial 'Area Code + 114'

* For quick and precise directory assistance service, please state the correct business name (or person's name) and address (the location).

Charges

	Charges for Use	Particulars
Standard time	\120/number provided	No call charges
Premium time	\140/number provided	No call charges

- Standard time : weekdays: 09:00 ~ 18:00, Saturday: 09:00 ~ 13:00
- Premium time : weekdays: 00:00 ~ 09:00, 18:00 ~ 24:00
  Saturdays: 00:00 ~ 09:00, 13:00 ~ 24:00
  Public Holidays: 00:00 ~ 24:00

Korea Information Service

Product

Directory Assistance Service

Basic Service

Service Overview

A service which searches and provides phone numbers when customers dial '114' and request the phone number of a subscriber with a specific category or business name (or person's name).

How to use

- Standard Phone : Dial '114' or 'Area Code + 114'
- Public Pay Phone : After inserting 100 won, dial '114' or 'Area Code + 114'
- Cellular Phone & PCS : Dial 'Area Code + 114'

* For quick and precise directory assistance service, please state the correct business name (or person's name) and address (the location).

Charges

	Charges for Use	Particulars
Standard time	\120/number provided	No call charges
Premium time	\140/number provided	No call charges

- Standard time : weekdays: 09:00 ~ 18:00, Saturday: 09:00 ~ 13:00
- Premium time : weekdays: 00:00 ~ 09:00, 18:00 ~ 24:00
  Saturdays: 00:00 ~ 09:00, 13:00 ~ 24:00
  Public Holidays: 00:00 ~ 24:00

EXHIBIT 6

US 10/585,602
DOC.5-1

zjwlim (Ji-Won Lim)

보낸 사람: zjwlim (Ji-Won Lim)
보낸 날짜: 2007년 5월 15일 화요일 오후 8:07
받는 사람: 'thklm38@hotmail.com'
참조: jyklm1 (Joo-Young Kim)
제목: [김태홍님]김.장법률사무소입니다.(FE251547)
첨부 파일: FE251547-김태홍-서명서류.pdf

수 신 : 김태홍 님
경기도 이천시 무법읍 아미리 산 136-1 (우.467-860)
제 목 : 미국 특허 출원 제 10/585,602호
당소 정리 번호 : FE251547

김태홍 선생님,

여러차례 서신을 송부해드렸는데도 본건과 관련하여 아무런 의사표현이 없으셔서 다시 한번 연락드립니다.

귀하의 발명에 대해 특허를 받을 수 있는 권리는 유티스타콤에 있습니다. 유티스타콤은 귀하의 발명에 대해 해외 출원을 진행 중에 있습니다만, 유럽, 중국, 일본 등과는 달리 미국은 발명자의 서명 서류를 필요로 하고 있습니다. 이러한 서류의 제출은 발명자가 협조하지 않으면 불가능하게 되겠지만 이 경우에는 발명자가 협조하지 않는다는 것을 증명할 수 있는 관련 서류로 갈음함으로써 꼭 제출하지 않아도 무방합니다.

서명을 하고 안하고의 육실관계에 있어 특별한 사항은 없습니다. 다만 귀하께서는 이전소속 직장에서 소정의 보상을 받고 직무발명 양도서에 서명함으로써 특허를 받을 권리를 타인에게 넘겼기 때문에 특허를 받을 권리의 최종 승계자가 특허를 받을 수 있도록 신의 성실로 협조하여야할 의무가 있다고 추정할 수 있습니다. 또한가지는 서명을 하겠다는 취지와 함께 서명과 관련된 시간 소비등에 대한 보상을 요구하는 경우 유티스타콤 미국 본사에서 소정액($250:변화가 있을 수 있음)을 지급한다는 결정이 있었습니다.

상기 설명을 참조하시고 서명 협조에 대한 귀하의 의견을 본 메일에 회신으로 통지해주시기 바랍니다. 서명을 해주실 경우 첨부한 서명서류의 지정된 위치에 서명하여 당 사무소 착불로 택배/퀵서비스편으로 서류 원본을 보내주시기 바랍니다. 서명을 안하겠다고 하시는 경우에는 미국 특허청에 이 사실을 증거자료와 함께 제출하도록 하겠습니다.

기타 궁금하신 사항은 아래 담당자에게 연락주시기 바랍니다.

김.장법률사무소
변리사 김주영 (전화 02-2122-3561)
과장 임지원 (전화 02-2122-3838)

첨부파일: 서명서류(발명자선언서 및 양도증)

ps. 사인한 원본서류 발송시, 아래 양식도 채워서 함께 보내주시기 바랍니다.

사 례 금 (Courtesy Disbursement)	
이름 (Name)	김 태 홍 (Tae Hong Kim)
미국 특허 출원 번호 (U.S. Serial No.)	10/585,602
사무소 관리 번호 (K&C Ref. MBHB Ref.)	FE251547/ 05-507-B
혼인형의은행정보 (Bank Info.) 거래은행 (Bank Name) 계좌번호 (Account No.)	
등기우편수령가능주소 (Address for Correspondence)	

2007-05-15

전화번호 (Telephone No.)	
금액 (Amount)	US$250
차필서명 (Acceptance Signature)	
서명일자 (Date)	

Ji-Won Lim
zjwlim@ip.kimchang.com
직통 : (02) 2122 3838

金·張 法律事務所
서울시 종로구 신문로 1가 226 흥국생명빌딩 9층 우편번호 110-786
전화: (02) 764-8855 / (02) 2122-3900 (대표)
팩스: (02) 741-0328 / (02) 745-5954 / (02) 763-7434

[Translation]

[E-mail to the inventor Tae Hong Kim from K&C staff, Jiwon Lim]

From: zjwlim (Ji-Won Lim)
Date: May 15, 2007 8:07 PM
To: thkim38@hotmail.com
Cc: jykim1 (Joo-Young Kim)
Subject: [To. Mr. Tae Hong Kim] An announcement from Law offices of Kim & Chang
Attachment(s): FE251547-THK -SIGNATURE DOCUMENTS.pdf

Dear Mr. Kim,

This is a reminder with regard to the subject case.

As I explained several times before, the right to receive a patent was transferred to UTStarcom Korea Limited. With respect to this invention, a Korean patent application was filed and its counterpart foreign applications were filed by UTStarcom. Unlike other countries such as Europe, China, and Japan, the U.S. Patent law requires documents signed by the inventors. Therefore, if the inventor is uncooperative, the assignee cannot submit the required documents. However, the assignee can substitute the required documents with due diligence documents evidencing the inventor's noncooperation.

Signing of the documents we presented to you results in no loss or no gain to you. It is our understanding that you had assigned your right to your former employer company by signing on the Inventor's Declaration and Assignment. Thus, you are expected to duly cooperate with the right owner or its successor.

For your information, recently we were instructed to pay (currently USD 250) as courtesy disbursement for the inventors assistances in providing signatures.

Please consider the foregoing and let us know via return e-mail whether you wish to cooperate in this matter or not. If you decide to cooperate, please return the signed documents together with the below form. If not, we will incorporate your decision in a due diligence document, which will be filed with the U.S. Patent and Trademark Office.

If you have any other questions, please do not hesitate to contact me.

Law Offices of Kim & Chang
Patent Attorney Joo-Young Kim (Tel. 02-2122-3561)
Assistant Manager Jiwon Lim (Tel. 02-2122-3838)

ps. Please also provide us with your bank information and signature in the below form.

[Translation]

사 례 금 (Courtesy Disbursement)	
이름 (Name)	김 태 홍 (Tae Hong Kim)
미국 특허 출원 번호 (U.S. Serial No.)	10/585,602
사무소 관리 번호 (K&C Ref. MBHB Ref.)	FE251547/ 05-507-B
본인명의은행정보 (Bank Info.) 거래은행 (Bank Name) 계좌번호 (Account No.)	
등기우편수령가능주소 (Address for Correspondence)	
전화번호 (Telephone No.)	
금액 (Amount)	USD250
자필서명 (Acceptance Signature)	
서명일자 (Date)	

MEMORANDUM OF LAW IN SUPPORT OF PETITION UNDER 37 C.F.R. § 1.47(b) BY PERSON HAVING PROPRIETARY INTEREST TO FILE APPLICATION ON BEHALF OF INVENTOR

This memorandum of law is in support of Petition under 37 C.F.R. § 1.47(b) to allow UTStarcom, Inc. ("UTStarcom") to make the application on behalf of a non-signing inventor.

BACKGROUND

UTStarcom submitted a Petition under 37 C.F.R. § 1.47(b) to allow UTStarcom to make the Application on behalf of the inventor listed in Schedule A, whom UTStarcom has been unable to locate. The Petition was denied on the grounds that UTStarcom allegedly failed to establish a proprietary interest in the above-referenced U.S. Application.

STATEMENT OF FACTS

All facts in support of the argument and conclusion are set forth in the Declaration of Joo-Young Kim under M.P.E.P. 409.03(f).

ARGUMENT AND CONCLUSION

UTStarcom should be awarded title to the above-referenced U.S. Application because UTStarcom, as the assignee of patent rights to the underlying Korean Application and subsequent patent applications granted by the assignor Hyundai Syscomm Inc. ("Hyundai Syscomm"), is the sole proprietary owner of the U.S. Application.

Under Korean Patent Law, UTStarcom is recognized as the owner of the Korean Application. First, the Korean Intellectual Property Office recognizes UTStarcom as the current owner of the Korean Application as a matter of record. Second, the invention disclosure form executed by the inventor in favor of Hyundai Syscomm, which includes an assignment of the subject matter of the Korean Application from the inventor to Hyundai Syscomm, is more than sufficient to overcome any challenge to UTStarcom's ownership interest.

The Korean Patent Act provides that a patent application of an employee may be filed directly by the employee's company, without an explicit assignment from the employee to the employee's company. Korean Patent Act, Article 42. Unless the examiner or a third party contests the company's right to file the application, the company becomes the owner of the application for all intents and purposes. Thus, even in the absence of an employee-inventor assignment, a Korean Patent Application filed by a company without contest by others is the proprietary owner of the patent rights. See Korean Patent Act, Article 42, Para 1.

In the instant case, Hyundai Syscomm filed the Korean National Application , listed in Schedule A, as the named applicant. The filing of the application was not contested by the Examiner or any third party. Thus, under Korean Law, Hyundai Syscomm became the owner of the Korean application even in the absence of an employee inventor assignment. Subsequently, the Hyundai Syscomm's patent portfolio, including the above-mentioned Korean Application, was assigned to UTStarcom. This assignment was recorded with the Korean Intellectual Property Office, without objection, making UTStarcom the legal owner of the above-mentioned Korean Application.

Under the present circumstances, only the inventor(s) may challenge the legitimacy of Hyundai Syscomm's ownership of the

Korean Application. Korean Patent Act, Articles 34 and 35. However, any challenge by the inventor(s) would fail under Korean Patent Law. The inventor(s) executed an invention disclosure form, which assigns the subject matter of the Korean Application to Hyundai Syscomm. Because the subject matter described in the invention disclosure form is virtually identical to the subject matter contained in the Korean Application, the assignment therein would be deemed by a Korean court of law to assign the Korean Application to Hyundai Syscomm. See In-Chul Choi v. Samsung Electonics Co., Ltd., 2001 Gahap 13977 (Seoul District Court, August 22, 2002) (recognizing the validity of the assignment based on the content in the invention disclosure form despite the absence of a specific application number reference). Thus, even if challenged, the chain of title of the Korean Application would be sustained under Korean Patent Law and UTStarcom would remain the ultimate owner.

This ownership of the Korean Application, in conjunction with the other assignment terms of the acquisition agreement previously submitted, establishes UTStarcom's rights to the subsequent PCT application and U.S. national phase application. Thus, UTStarcom has a proprietary interest in the referenced U.S. Application (listed in Schedule A), and should be allowed to make the application in U.S. on behalf of the missing inventor under 37 C.F.R. § 1.47(b).

Respectfully submitted

Date: June 11, 2007 By: Kim Joo-Young

Joo-Young Kim
Kim & Chang
Hungkuk Life Insurance Building, 9F,
226 Sinmunno 1-ga, Jongno-gu,
Seoul 110-786, Korea

DECLARATION IN SUPPORT OF PETITION UNDER 37 C.F.R. § 1.47(b) BY PERSON HAVING PROPRIETARY INTEREST TO FILE APPLICATION ON BEHALF OF INVENTOR

Dear Sir:

This Declaration is in support of Petition under 37 C.F.R. § 1.47(b) to allow UTStarcom, Inc. to make the application on behalf of the non-signing inventor(s) listed in Schedule A, column 3, whom we have been unable to locate.

1. I, Joo-Young Kim, am a citizen of Korea, residing at Sangyong, Apt No. 103-1101, Sungsu-dong 1-ga 16/3, Sungdong-gu, Seoul, Republic of Korea.

2. I am a Korean patent attorney with the law firm of Kim & Chang, located at Hungkuk Life Insurance Building, 9F, 226 Sinmunno 1-ga, Jongno-gu, Seoul 110-786, Korea.

3. On behalf of Kim & Chang, I am representing UTStarcom Korea Limited, a wholly owned subsidiary of UTStarcom, Inc.

4. I am knowledgeable regarding Korean Patent Law.

5. I submit this declaration in support of the accompanying memorandum of law.

6. The Korean company Hyundai Syscomm filed the Korean National Application listed in Schedule A, Column 6 as the applicant of record, with inventor(s) in Schedule A, column 3 listed as the inventor(s).

7. The filing of the above-referenced Korean Application by Hyundai Syscomm was not opposed by the Examiner or any third party including the employee/inventor.

8. On April 27, 2004, UTStarcom, Inc., through its wholly owned subsidiary UTStarcom Korea Limited, acquired Hyundai Syscomm's Intellectual Property Portfolio, including the rights to the Korean National Application listed in Schedule A, column 6, and duly recorded this change of ownership with the Korean Intellectual Property Office without objection.

9. As a result of the acquisition, UTStarcom, Inc. became the sole proprietary owner of Hyundai Syscomm's Intellectual Property Portfolio, which includes the above-referenced Korean National Application.

10. UTStarcom Korea Limited filed the PCT application listed in Schedule A, column 8, claiming priority to the above-referenced Korean National Application.

11. The above-referenced PCT application entered U.S. National phase in the United States on the date listed in Schedule A, column 5, having the U.S. Application Serial Number listed in Schedule A, column 4.

12. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the

United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

Date: 16-January-2007 By: Joo-Young Kim

Joo-Young Kim
Kim & Chang
Hungkuk Life Insurance Building, 9F,
226 Sinmunno 1-ga, Jongno-gu,
Seoul 110-786, Korea

Exhibit 1

[KOREAN PATENT ACT]

제 34 조 (무권리자의 특허출원과 정당한 권리자의 보호)
발명자가 아닌 자로서 특허를 받을 수 있는 권리의 승계인이 아닌 자(이하 "무권리자"라 한다)가 한 특허출원이 제 33 조제 1 항 본문의 규정에 의한 특허를 받을 수 있는 권리를 가지지 아니한 사유로 제 62 조 제 2 호에 해당되어 특허를 받지 못하게 된 경우에는 그 무권리자의 특허출원후에 한 정당한 권리자의 특허출원은 무권리자가 특허출원한 때에 특허출원한 것으로 본다. 다만, 무권리자가 특허를 받지 못하게 된 날부터 30 일을 경과한 후에 출원을 한 경우에는 그러하지 아니하다.

제 35 조 (무권리자의 특허와 정당한 권리자의 보호)
제 33 조제 1 항 본문의 규정에 의한 특허를 받을 수 있는 권리를 가지지 아니한 사유로 제 69 조 제 1 항 제 2 호에 해당되어 특허취소결정이 확정된 경우 또는 제 33 조 제 1 항 본문의 규정에 의한 특허를 받을 수 있는 권리를 가지지 아니한 사유로 제 133 조 제 1 항 제 2 호에 해당되어 특허를 무효로 한다는 심결이 확정된 경우에는 그 특허출원후에 한 정당한 권리자의 특허출원은 취소 또는 무효로 된 그 특허의 출원시에 특허출원한 것으로 본다. 다만, 그 특허의 등록공고가 있는 날부터 2 년을 경과한 후에 특허출원을 하거나 취소결정 또는 심결이 확정된 날부터 30 일을 경과한 후에 특허출원을 한 경우에는 그러하지 아니하다.

[TRANSLATION]

Article 34 (Patent Application Filed by an Unentitled Person and Protection of the Lawful Holder of a Right)
Where a patent cannot be granted because an application was filed by a person who is not the inventor or a successor to the right to obtain a patent (referred to as "an unentitled person") under Article 33(1) as prescribed in Article 62(ii), a subsequent application filed by the lawful holder of the right is deemed to have been filed on the filing date of the earlier application filed by the unentitled person. This provision does not apply, however, if the subsequent application is filed by the lawful holder of the right more than thirty days after the date on which the application filed by the unentitled person was rejected.

Article 35 (Patent Granted to an Unentitled Person and Protection of the Lawful Holder of a Right)
Where a decision to revoke a patent becomes final for lack of entitlement to obtain a patent under Article 33(1) as prescribed in Article 69(1)(ii) or a decision to invalidate becomes final due to a lack of entitlement under Article 33(1) as prescribed in Article 133(1)(ii), a subsequent application filed by the lawful holder of the right is deemed to have been filed on the filing date of the revoked or invalidated application. However, this provision does not apply if the subsequent application is filed more than two years after the publication date of the first application or more than thirty days after the decision to revoke or invalidate becomes final.

[KOREAN PATENT ACT]

제 42 조 (특허출원)

①특허를 받고자 하는 자는 다음 각호의 사항을 기재한 특허출원서를 특허청장에게 제출하여야 한다.

1. 특허출원인의 성명 및 주소(법인인 경우에는 그 명칭 및 영업소의 소재지)
2. 특허출원인의 대리인이 있는 경우에는 그 대리인의 성명 및 주소나 영업소의 소재지(대리인이 특허법인인 경우에는 그 명칭, 사무소의 소재지 및 지정된 변리사의 성명)
3. 삭제
4. 발명의 명칭
5. 발명자의 성명 및 주소
6. 삭제

[TRANSLATION]

Article 42 (Patent Application)

(1) A person seeking to register a patent shall file a patent application with the Commissioner of the Korean Intellectual Property Office, stating the following:

(i) the name and address of the applicant (and, if a legal entity, the name and address of the business);

(ii) the name and residential or business address of the agent, if any (and, if the agent is a patent legal entity, the name and address of the business and the name of the designated patent attorney);

(iii) deleted;

(iv) the title of the invention;

(v) the name and address of the inventor;

(vi) deleted.

Exhibit 2

[Translation]

Seoul Southern District Court

Judgment

Case No.	2001 Gahap 13977
Plaintiff:	In Chul Choi
Defendant:	Samsung Electronics Ltd.
Pronouncement:	August 22, 2002

ORDER

The confirmation claim of the present action is dismissed.

Tenor of Complaint

Plaintiff hereby seeks confirmation that the patented inventions, described in the patent right list of the accompanying sheet, do not belong to an in-service invention.

GROUNDS

1. Findings of Facts

A. The Defendant's company, taking fabrication, sale, etc. of communication mechanisms and related devices as its objective under its constitution, has manufactured mobile-phone terminals since May of 1989. The Plaintiff entered the Defendant's company on January 10, 1989, and had served as a member of a team known as the "Time Machine Team (TMT)" between July 13, 1992 and February 16, 1995.

B. TMT of the Defendant's company is a department that was organized by selecting incumbent staff to create ideas for new product development. TMT holds a weekly evaluation meeting, where team members exchange ideas equipped with marketability and practicability, and hold quarterly meetings that report the results to the board of directors, assigning no specific tasks to its team members. The Plaintiff was mainly focused on conceiving and commercializing a new Hangul inputting method, submitting a report titled "Value of Text in the Multimedia World" showing the needs and practicability

[Translation]

of a new Hangul inputting method on May 20, 1994, and a report titled "First report regarding commercialization drive of a new Hangul inputting method" on July 18, 1994, together with his teammate, Dong Ki Rui.

C. During his tenure on TMT, the Plaintiff invented "Method and Apparatus for Generating Text Inputting Codes (hereinafter, referred to as the 'first invention')," described in patent right list 1 of the accompanying sheet, and transferred the right to obtain a patent for the Defendant's company while providing an in-service invention report on the first invention on February 19, 1993. The Defendant's company filed a patent application for the first invention in its name on July 6, 1993, and completed the patent registration on March 13, 1996.

D. Furthermore, the Plaintiff, together with his teammate, Dong Ki Rui, invented "Method and Apparatus for Generating Text Inputting Codes (hereinafter, referred to as the 'second invention')" described in patent right list 2, and transferred the right to obtain a patent for the Defendant's company while providing an in-service invention report on the second invention on October 13, 1994. The Defendant's company filed a patent application for the second invention in its name on May 11, 1995, and completed the patent registration on August 10, 1998.

E. The Defendant's company has manufactured and sold mobile-phone terminals using the text inputting methods of the inventions since November of 1998.

2. The Plaintiff's Claims and Holding thereon

A. Gist of the Plaintiff's Claims

The Plaintiff seeks: (a) confirmation that the fist and second inventions are not an in-service invention, arguing that the inventions were misconceived as an in-service invention and filed in the name of the Defendant's company although they actually belong to a liberal invention; and (b) the Defendant's return of 1 billion KrW as part of an unjust enrichment, arguing that since the contracts of transfer were based on a misconception for

[Translation]

the inventions to be an in-service invention are invalid, the Defendant is not a legitimate patentee and has an obligation to return, to the Plaintiff, the profits earned by practicing the inventions as an unjust enrichment.

B. Relevancy of the Confirmation Claim

The Defendant made a defense prior to a main hearing that the Plaintiff's confirmation claim lacks eligibility and thus is irrelevant because it seeks confirmation of a factual matter. The Plaintiff seeks the confirmation for the first and second inventions to not be an in-service invention as a basis for the unjust enrichment return claim being sought by the present action. This is to confirm part of a legal requirement fact, and thus is irrelevant. Furthermore, the confirmation stake of a confirmation action can be recognized if the obtainment of a confirmation judgment is the most effective and appropriate means for eliminating the challenge and risk when the plaintiff's legal status is challenged and risked. However, as will be seen in item C. (1), even though the first and second inventions were not an in-service invention, this would not affect the patent right registered in the name of the Defendant's company, unless the invalidation decision is rendered and becomes final and conclusive in a patent registration invalidation trial. Therefore, because seeking the confirmation for the inventions to not be an in-service invention cannot be seen as an effective and appropriate means, the Plaintiff's confirmation claim of the present action is irrelevant.

C. Unjust Enrichment Return Claim

(1) The Plaintiff argues first, that since the first and second inventions are not an in-service invention but a liberal one, each contract for transferring each right to obtain a patent to the Defendant is invalid per se for primitive impossibility of the objective of a legal activity or under Article 39, Paragraph 1 of the Patent Act, or invalid for violating Article 103 of the Civil Code.

In regard to this, if the first and second inventions belong to a liberal invention, Article 39, Paragraph 1 of the Patent Act stipulates that an invention constitutes an in-service invention if the invention was made by an employee, etc. in connection with his/her service and falls by nature within the business

[Translation]

range of the employer, etc., and the activity resulting into the invention was part of the present or past duties of the employee, etc.

As previously seen, the Defendant's company takes the fabrication and sale of communication mechanisms as one of its founding objectives, and has set the mobile-phone terminal as one of the primary manufactured items from the year of 1989 through to the present time. Since the inventions are directed to a text inputting method usable for mobile-phone terminals, these are regarded to fall within the business range of the Defendant's company. Furthermore, the Plaintiff's then duty was to create ideas for new products development in the field of the information and telecommunication at the time of conceiving each invention, and the Plaintiff reached the first and second inventions substantially as a result of focusing mainly on collecting ideas for a Hangul inputting method. As such, each invention is determined to fall within the Plaintiff's duty.

Therefore, since the first and second inventions should belong to an in-service invention, the Plaintiff's arguments contend the validity of each transfer contact on premise of the opposite.

(2) The Plaintiff also argues that since the patent application for the second invention was filed four months after the Defendant's company succeeded to the right to the invention from the Plaintiff, the second invention should be regarded as a liberal invention under Article 11, Paragraph 1 of the Invention Promotion Act, and the Defendant should return unjust enrichment, amounting to the royalty of a non-exclusive license, for failing to obtain consent to a non-exclusive license from the inventor Plaintiff under Article 2 of the same.

Article 11 of the Invention Promotion Act views an invention as a liberal invention in case an employer, etc. fails to file a patent application within a period designated under the Presidential Order (Article 5 of the same designates the period for four months) after succeeding the right to an in-service invention or waive filing of the application in writing (Paragraph 1), and stipulates that the employer, etc cannot own a non-exclusive license to the in-service invention being regarded as a liberal one without the consent of the employee, etc in spite of Article 39, Paragraph 1 of the Patent Act (Paragraph

[Translation]

2). The fact that the Defendant's company filed the application for the second invention on May 11, 1995, four months passing from October 13, 1994 when the Defendant's company succeeded to the right to the second invention from the Plaintiff, is as previously seen.

However, even if the Defendant's company had completed the patent registration in its name, although the transfer contract of the second invention was invalidated under the above provision and the Defendant's company did not have a right to obtain a patent, the Plaintiff could not assert invalidity of the patent right having been registered in the name of the Defendant's company until the patent invalidation decision goes final and conclusive. Of course, the Plaintiff could request a patent invalidation trial based on the above grounds, which however, is not feasible here. Therefore, the Defendant has a right to legally practice the invention, and needs not obtain consent of the Plaintiff for practicing the invention because the Plaintiff did not register the patent in his/her own name. As such, the Plaintiff's above arguments are groundless and unreasonable.

서 울 지 방 법 원

남 부 지 원

판 결

사	건	2001가합13977호
원	고	최인철
피	고	삼성전자주식회사
판 결 선 고		2002. 8. 22.

주 문

이 사건 소 중 확인청구 부분을 각하한다.

청 구 취 지

원고와 피고 사이에서 별지 특허권목록 기재 1, 2의 특허발명은 직무발명이 아님을 확인한다.

이 유

1. 기초사실

가. 피고회사는 통신기계기구 및 관련기구와 그 부품의 제작, 판매 등을 그 정관상의 목적으로 하고, 1989. 5.경부터 이동전화단말기를 생산해 온 회사이고, 원고는 1989. 1. 10. 피고회사에 입사하여 1992. 7. 13.부터 1995. 2. 16.까지 사이에 피고회사의 '타임머신팀'에 소속되어 근무하였다.

나. 피고회사의 '타임머신팀'은 신상품개발을 위한 아이디어 창출을 위하여 사내공모를 통해 직원을 선발, 조직한 부서로 그 팀원들은 구체적인 특정 업무를 맡지 아니한 채 매주 팀원들간에 시장성과 실현성 있는 아이디어를 제출하는 평가회를 가지고, 분기별로 경영진을 대상으로 그 결과물을 발표하는 정기 보고회를 개최하였는데, 원고는 같은 팀원인 류동기와 함께 1994. 5. 20. 새로운 한글입력방식의 필요성과 실용화 방안에 관한 '멀티미디어 세계에서 문자의 가치'라는 보고서를, 1994. 7. 18. '새로운 한글입력방법 사업화추진 1차 보고서'를 각 제출하는 등 주로 새로운 한글입력방식의 고안 및 사업화에 주력하였다.

다. 원고는 위 타임머신팀에 근무하던 중, 별지 특허권목록 1. 기재의 '문자입력코드 발생방법 및 장치'(이하 '제1발명'이라 한다)를 발명하고, 1993. 2. 19. 피고회사에 제1발명에 관한 직무발명신고를 하면서 특허받을 권리를 양도하였으며, 피고회사는 1993 7 6. 피고회사 명의로 제1발명에 관한 특허를 출원하여 1996. 3. 13. 특허등록을 마쳤다.

라. 또한 원고는 위 류동기와 함께 위 목록 2. 기재의 '문자입력코드 발생장치 및 방법'(이하 '제2발명'이라 한다)을 발명하고, 1994. 10. 13. 피고회사에 제2발명에 관한 직무발명신고를 하면서 특허받을 권리를 양도하였으며, 피고회사는 1995. 5. 11. 피고회사 명의로 제2발명에 관한 특허를 출원하여 1998. 8. 10. 특허등록을 마쳤다.

마. 피고회사는 1998. 11.경부터 위 발명들의 문자입력방식을 이용한 이동전화단말기를 생산, 판매해 오고 있다.

2. 원고의 청구 및 이에 대한 판단

가. 원고의 청구내용

원고는 ① 위 각 발명은 원고 개인의 자유발명에 해당됨에도 직무발명으로 오인되어 피고 명의로 특허등록이 된 것이라고 주장하면서 제1, 2발명이 직무발명이 아니라는 확인을 구하고, ② 위 발명들을 직무발명으로 오인하고 체결한 각 양도계약이 무효인 이상 정당한 특허권자가 아닌 피고는 위 발명들을 실시하여 얻은 수익을 부당이득으로서 원고에게 반환할 의무가 있다고 주장하면서, 그 일부로서 10억원을 지급할 것을 구한다.

나. 확인청구 부분의 적법성

피고는, 원고의 위 확인청구는 사실관계의 확인을 구하는 것으로 확인의 소의 대상적격이 없어 부적법하다고 본 안전 항변을 하므로 살피건대, 원고의 위 확인청구는 원고가 이 사건 소로써 구하고 있는 부당이득반환청구의 전제로 제1, 2발명이 직무발명이 아니라는 확인을 구하는 취지인바, 이는 법률요건사실 일부의 확인을 구하는 것이어서 무적법하고, 또한 확인의 소에 있어서 확인의 이익은 원고의 법적 지위가 불안, 위험할 때 그 불안, 위험을 제거하는데 있어 확인판결을 받는 것이 가장 유효·적절한 수단인 경우에 인정된다 할 것인데, 아래 다.의 (2)항에서 보는 바와 같이 가사 제1, 2발명이 직무발명이 아니라 하더라도 특허무효심판절차에서 무효심결이 확정되지 아니하는 이상에는 피고회사 명의로 등록된 특허권에 어떠한 효력이 미친다고 볼 수도 없으므로, 위 발명들이 직무발명이 아니라는 확인을 구하는 것은 원고에게 현존하는 법적 불안, 위험을 해소할 수 있는 유효·적절한 수단이라 할 수 없으니, 결국 원고의 이 사건 소 중 확인청구 부분은 부적법하다.

다. 부당이득반환청구 부분

(1) 원고는 먼저, 제1, 2발명은 직무발명이 아닌 자유발명이므로 그 특허받을 권리를 피고에게 양도한 위 각 양도계약은 법률행위 목적의 원시적 불능 또는 특허법 제39조 제3항에 의하여 당연 무효이거나 민법 제103조에 위반되어 무효라고 주장한다.

그러므로 과연 제1, 2발명이 자유발명인지에 관하여 보건대, 특허법 제39조 제1항은 직무발명의 개념에 관하여 종업원 등이 그 직무에 관하여 발명한 것이 성질상 사용자 등의 업무범위에 속하고, 그 발명을 하게 된 행위가 종업원 등의 현재 또는 과거의 직무에 속하는 경우 그 발명은 직무발명이라고 규정하고 있다.

앞에서 본 바와 같이 피고회사는 통신기계기구의 제작, 판매를 그 설립목적의 하나로 규정하고 있고, 1989년부터 현재까지 이동전화단말기를 주요 생산품목으로 하고 있으며, 위 발명들은 이동전화단말기에 이용될 수 있는 문자입력방식에 관한 발명이므로 피고회사의 업무범위에 속한다 할 것이다. 또한 위 각 발명 당시 원고의 직무는 정보통신부분의 신상품 개발을 위한 아이디어를 창출하는 것으로 실제 한글입력방식에 관한 아이디어 계발에 주력한 결과 제1, 2발명에 이르게 되었으므로 위 각 발명 행위는 원고의 직무에 속한다 할 것이다.

따라서 제1, 2발명은 직무발명에 해당한다고 보아야 할 것이므로, 위 발명들이 직무발명이 아님을 전제로 각 양도계약의 효력을 다투는 원고의 주장은 더 나아가 살필 것 없이 이유 없다.

(2) 원고는 또한, 제2발명에서는 피고회사가 원고로부터 발명에 관한 권리를 승계한 때로부터 4개월이 지나서 특허를 출원하였으므로 이는 발명진흥법 제11조 제1항에 의하여 자유발명으로 간주되고, 같은 조 제2항에 따라 발명자인 원고로부터 통상실시에 대한 동의를 받지 아니한 이상 피고는 원고에게 통상실시료 상당의 부당이득을 반환하여야 한다고 주장한다.

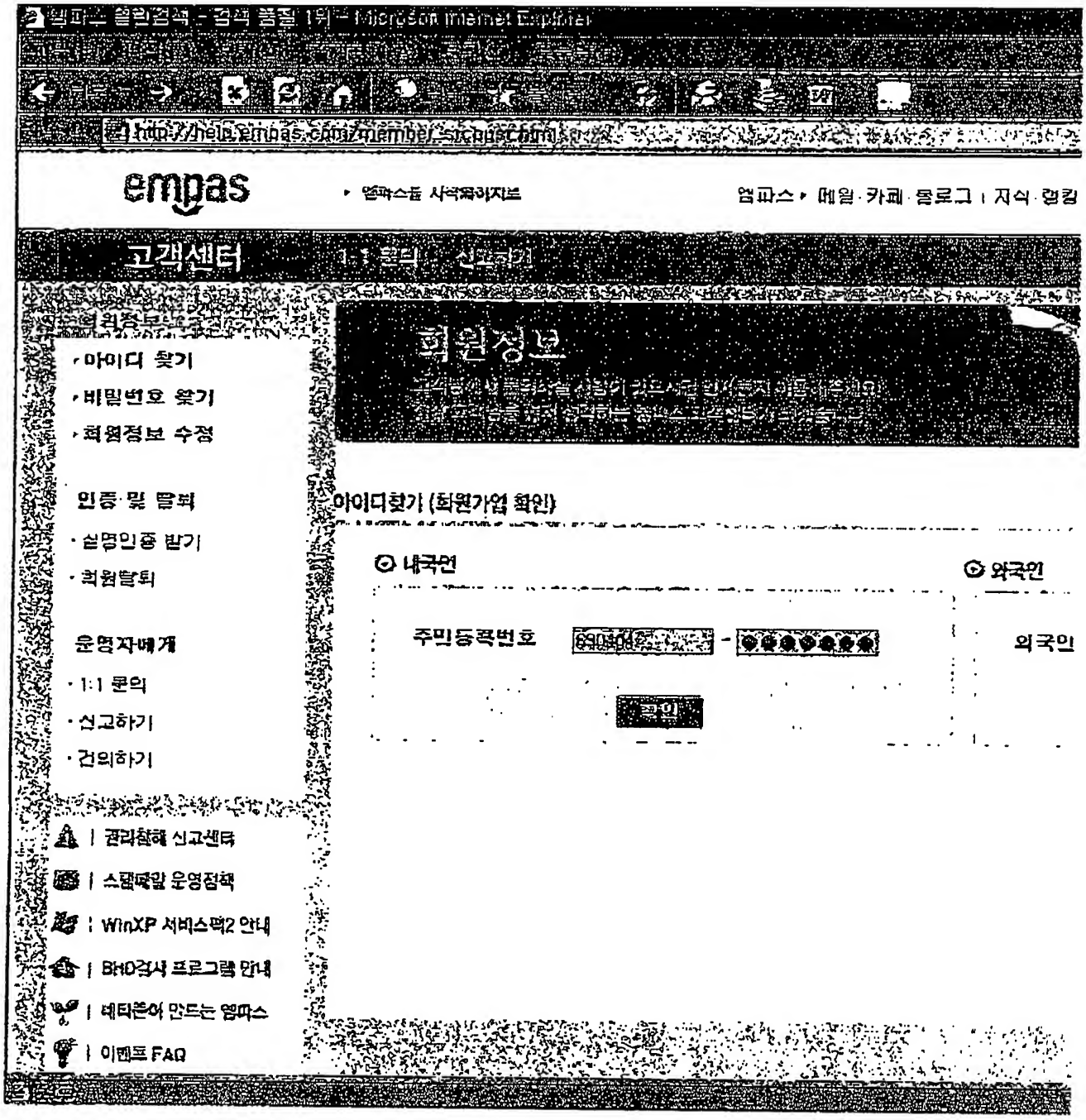
살피건대, 발명진흥법 제11조는 사용자 등이 직무발명에 관한 권리를 승계한 후 대통령령이 정하는 기간(같은 법 시행령 제5조는 그 기간을 4개월로 정하고 있다) 내에 출원을 하지 아니하는 경우 또는 서면으로 그 출원을 포기한 경우 당해 발명은 자유발명으로 보고(제1항), 자유발명으로 보는 직무발명에 대하여는 특허법 제39조 제1항의 규정에도 불구하고 당해 발명을 한 종업원 등의 동의를 받지 아니하고는 통상실

시권을 가질 수 없다(제2항)고 규정하고 있고, 피고회사가 원고로부터 제2발명에 관한 권리를 승계한 1994. 10. 13.로부터 4개월이 경과한 1995. 5. 11.에야 위 발명에 관한 특허를 출원한 사실은 앞에서 본 바와 같다.

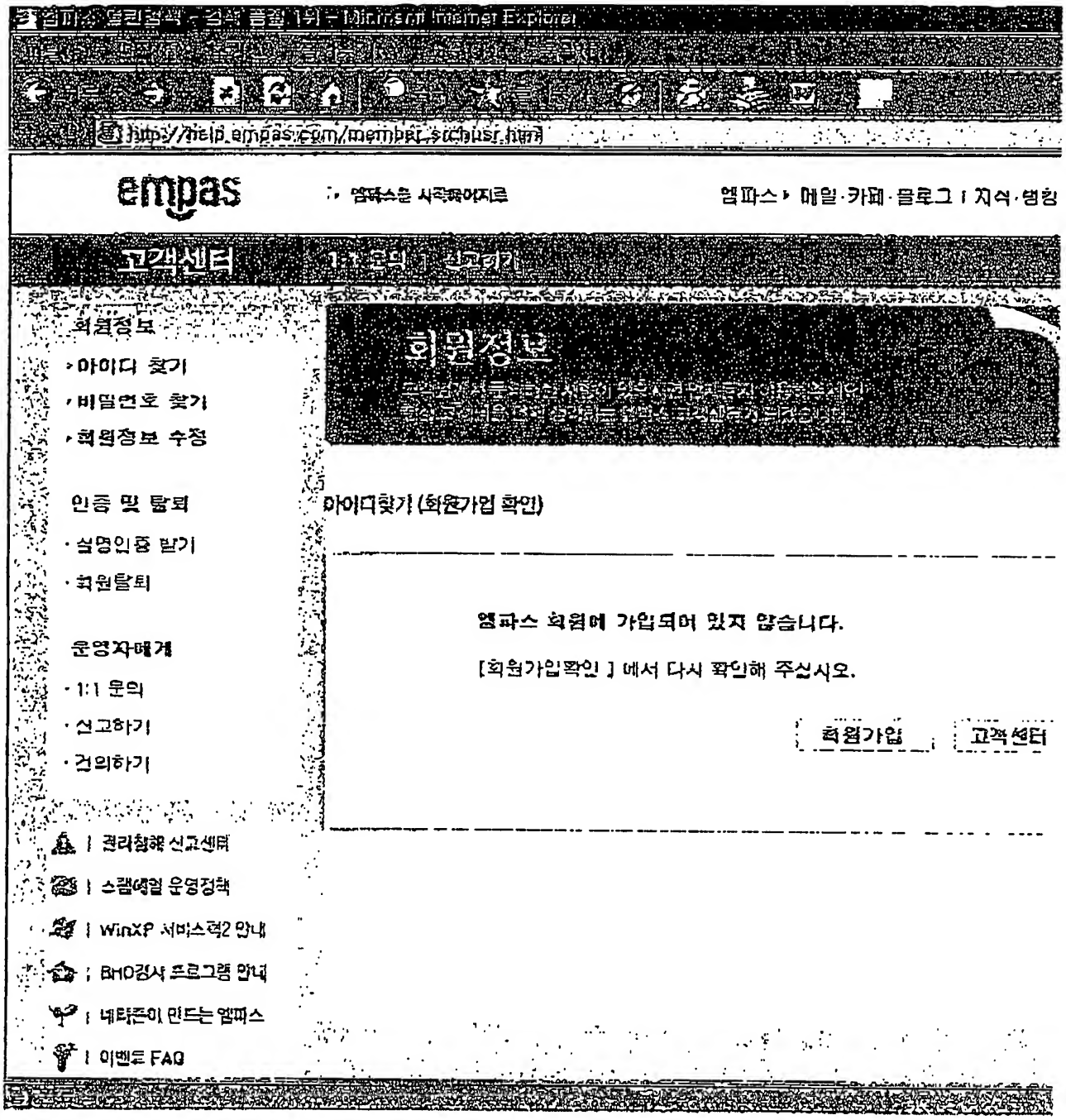
그러나 가사 위 법률규정에 의하여 제2발명에 관한 양도계약이 무효가 되어 피고회사가 특허를 받을 권리를 가지지 아니함에도 불구하고 그 명의로 특허등록을 마쳤다 하더라도 원고가 그와 같은 사유를 들어 특허무효심판을 청구함은 별론으로 하고 특허무효심결이 확정되기 전에는 피고 명의로 등록된 특허권의 무효를 주장할 수는 없는 것이므로 피고는 특허권자로서 적법하게 그 발명을 실시할 권리가 있고, 또한 원고가 자기 명의로 특허등록을 받지 아니한 이상 피고회사가 위 발명을 실시함에 있어 원고의 동의를 얻어야 한다고 볼 수도 없으므로, 원고의 위 주장은 이유 없다.

(2) Search from www.empas.com
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



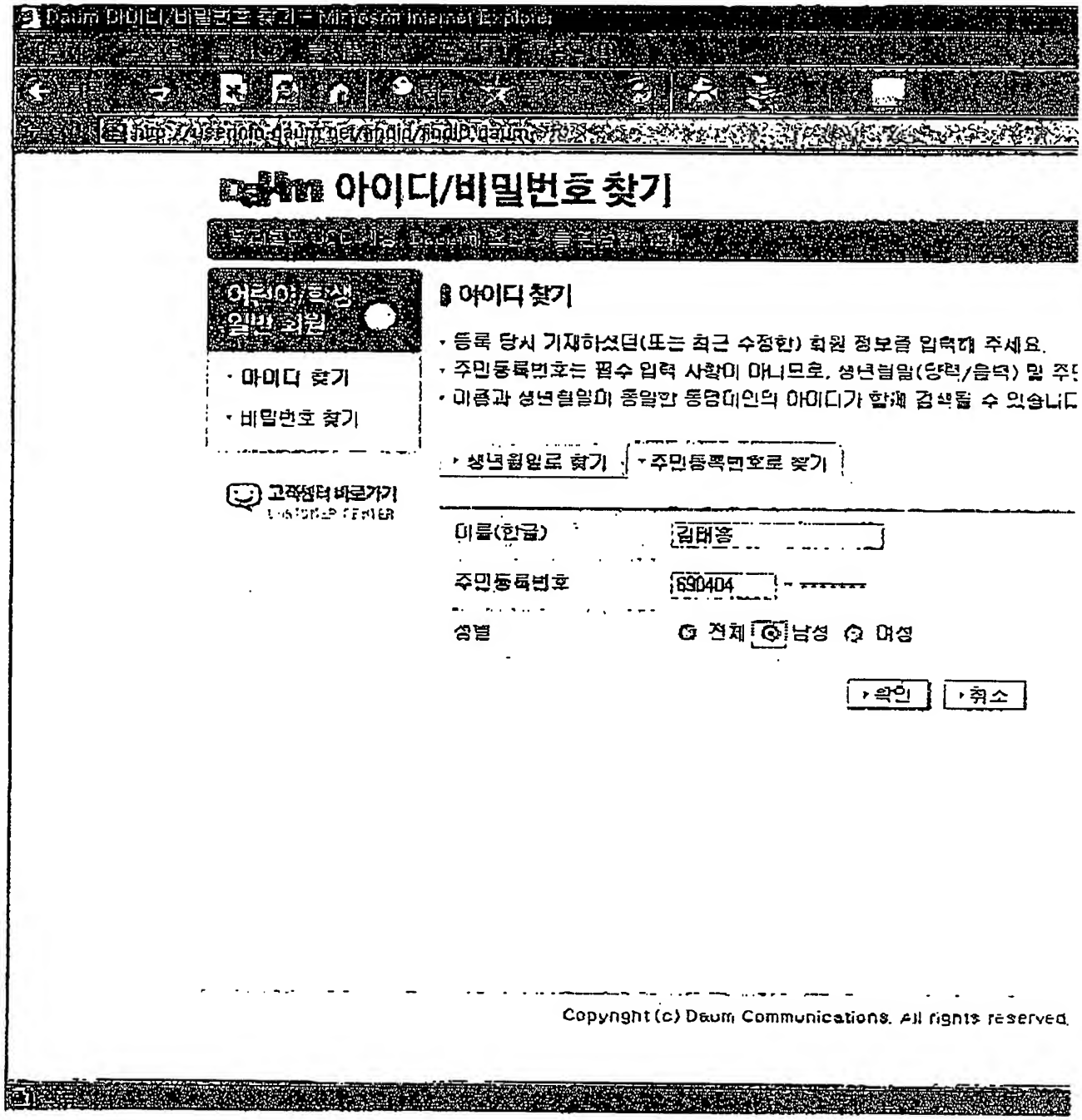
<output results: ID not found>



2007-05-12

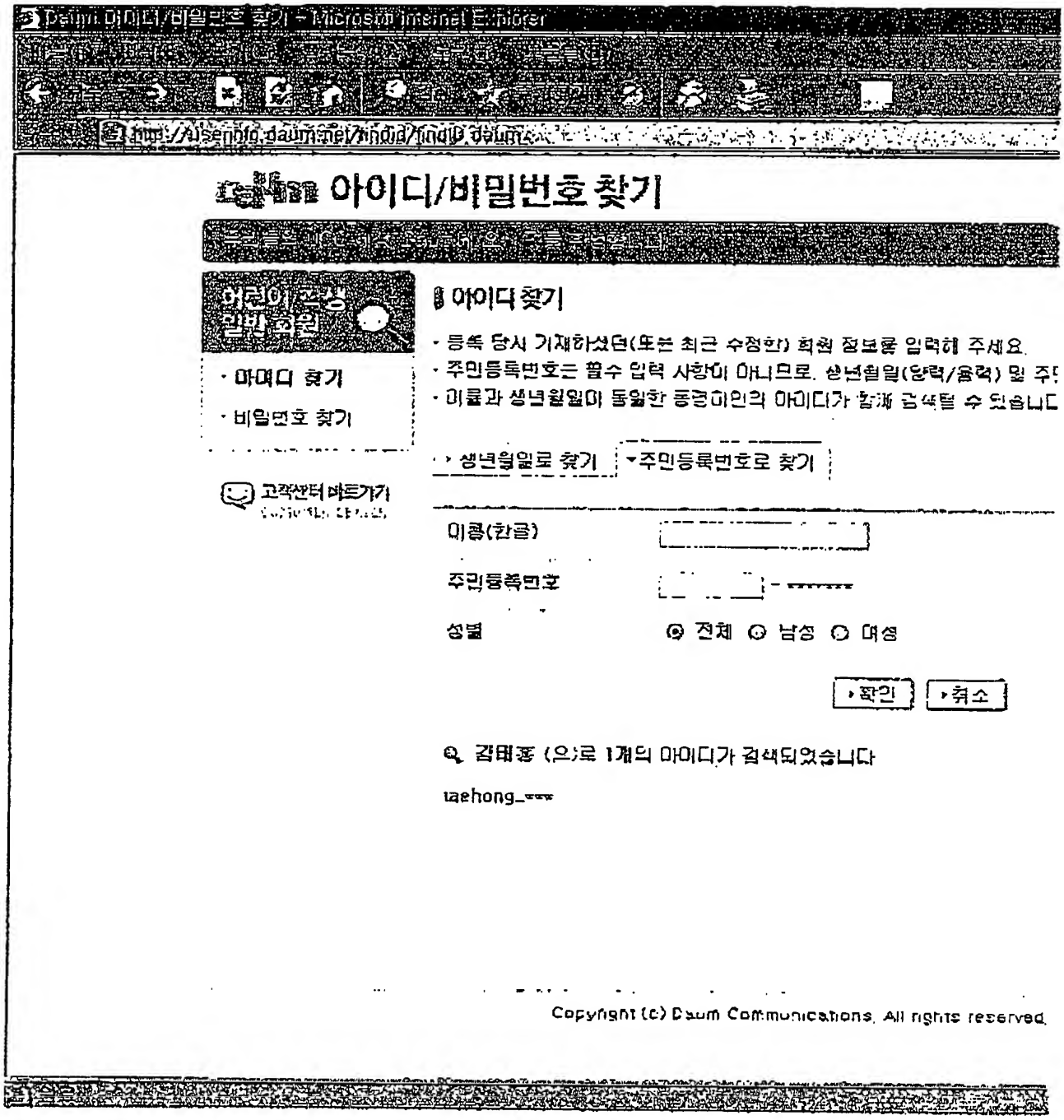
(3) Search from www.daum.net
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



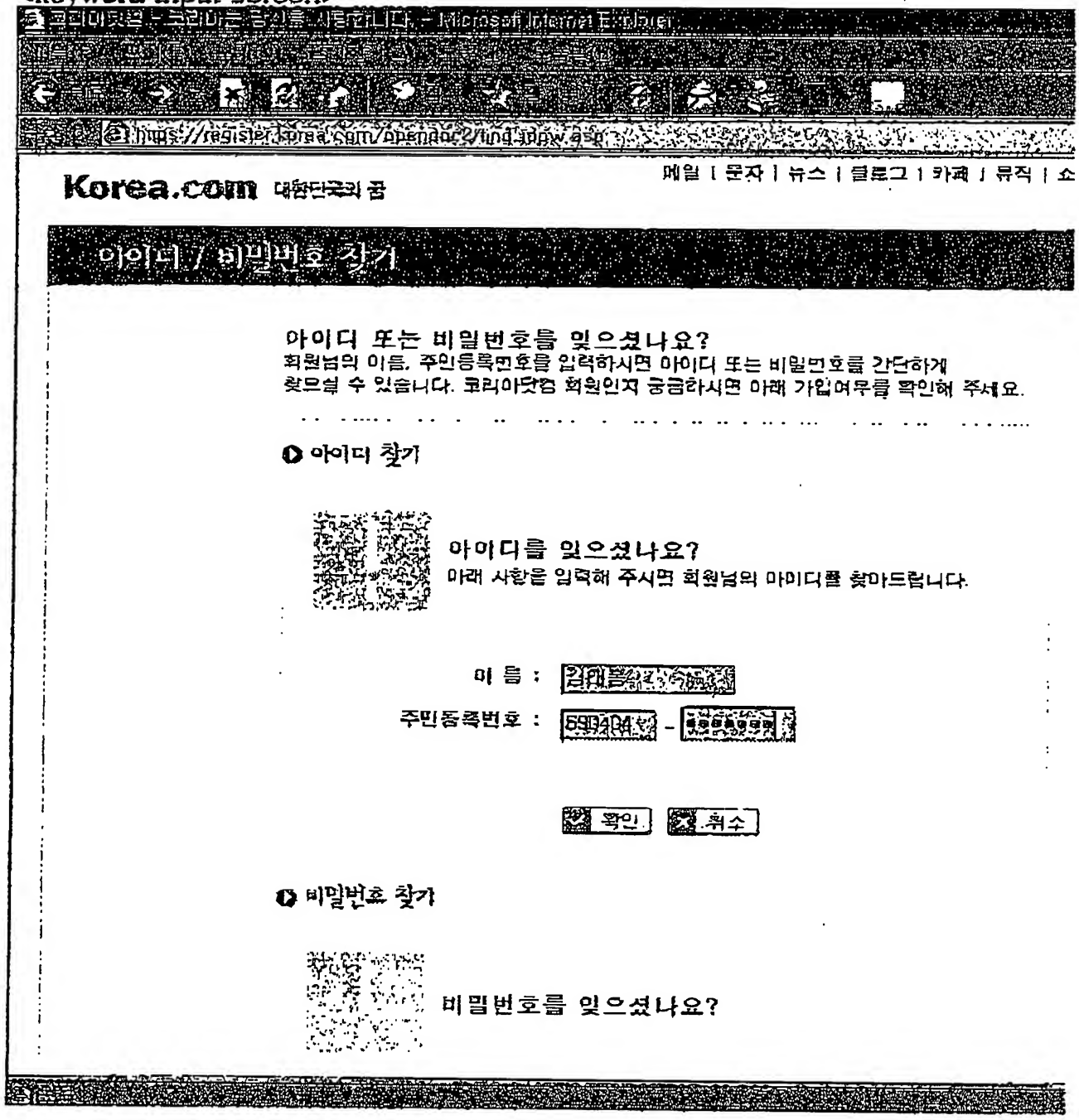
2007-05-12

<output results: 1 ID found: taehong_*** (incomplete)>

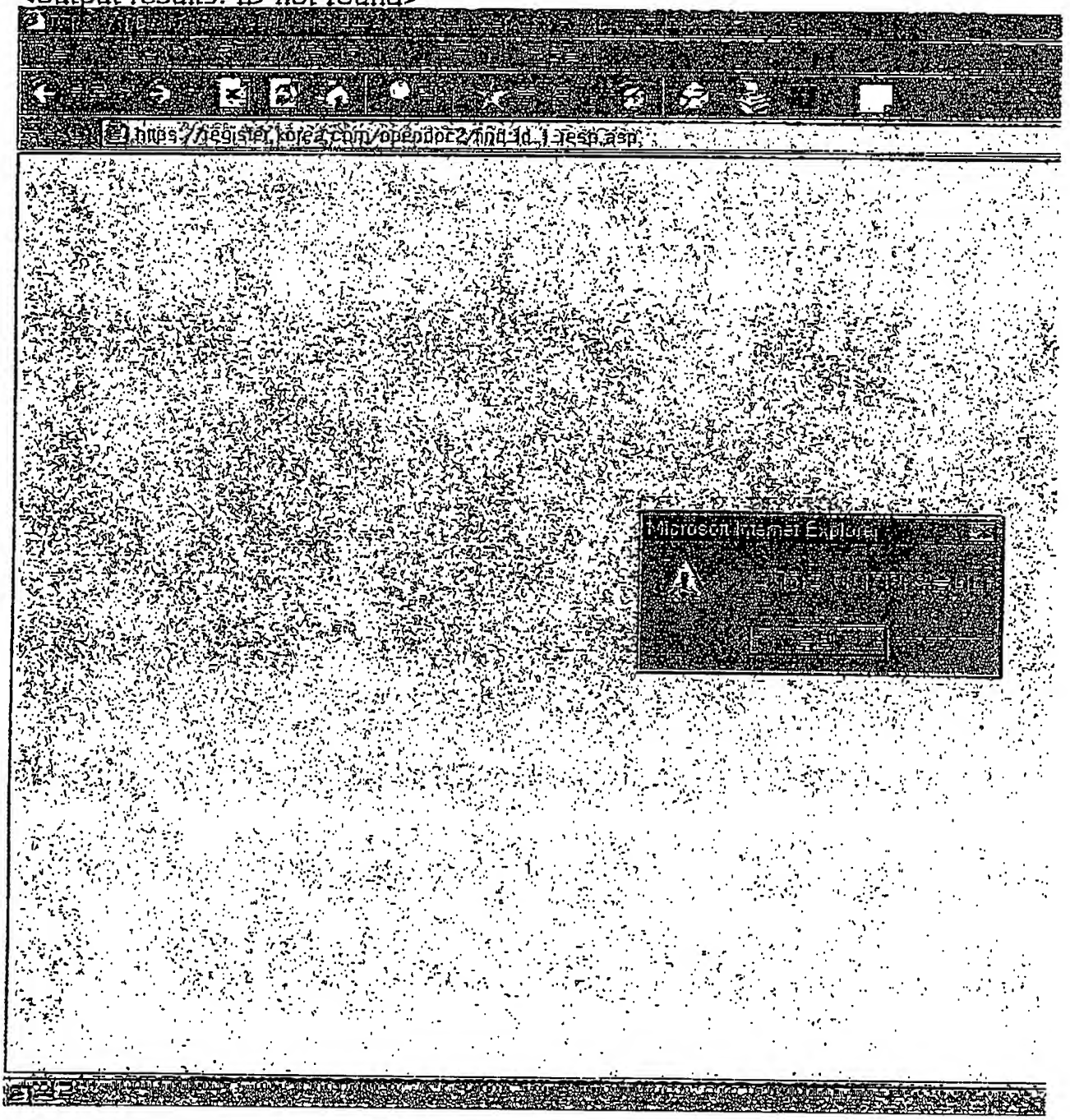


(4) Search from www.korea.com
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>

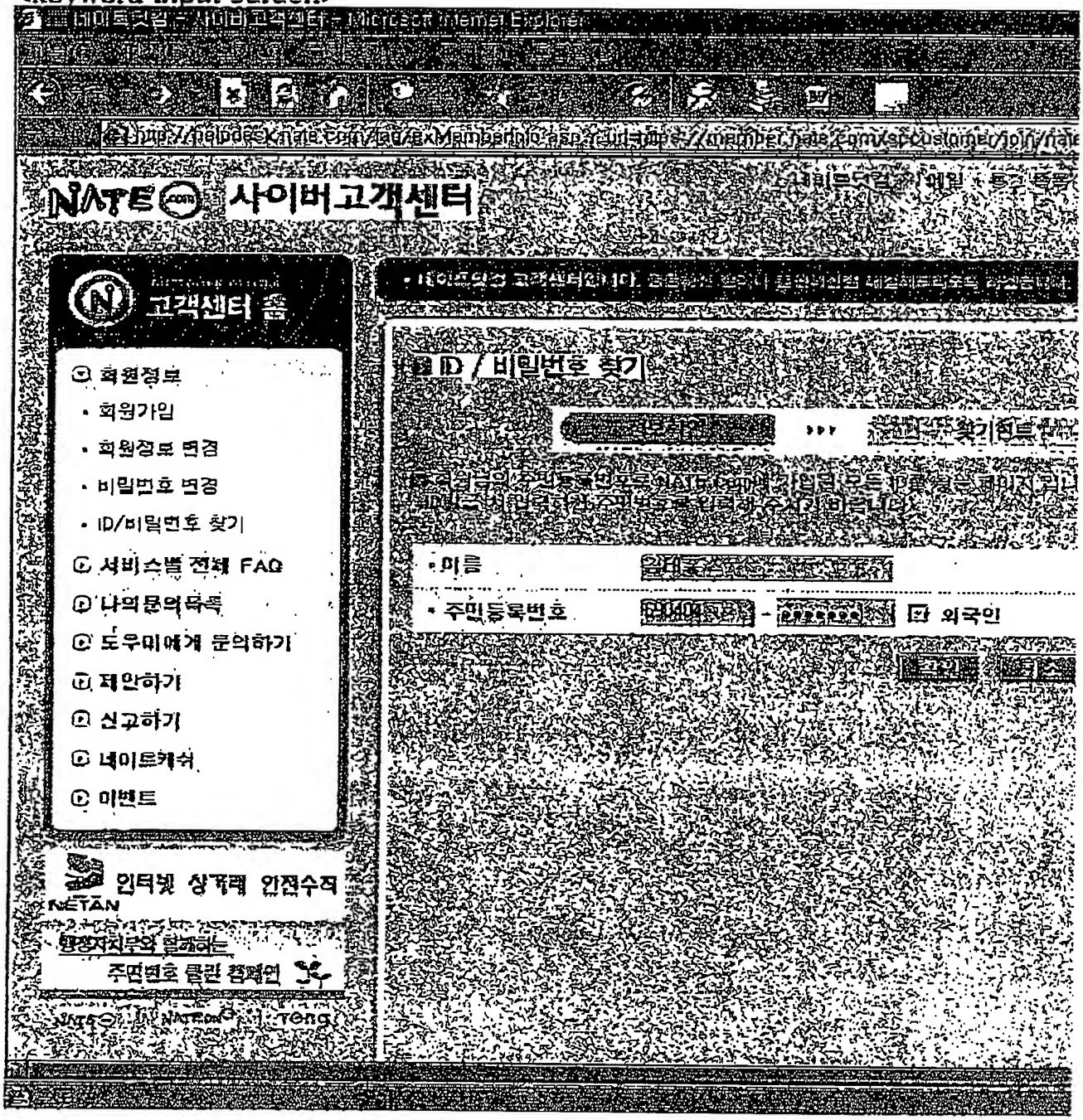


<output results: ID not found>



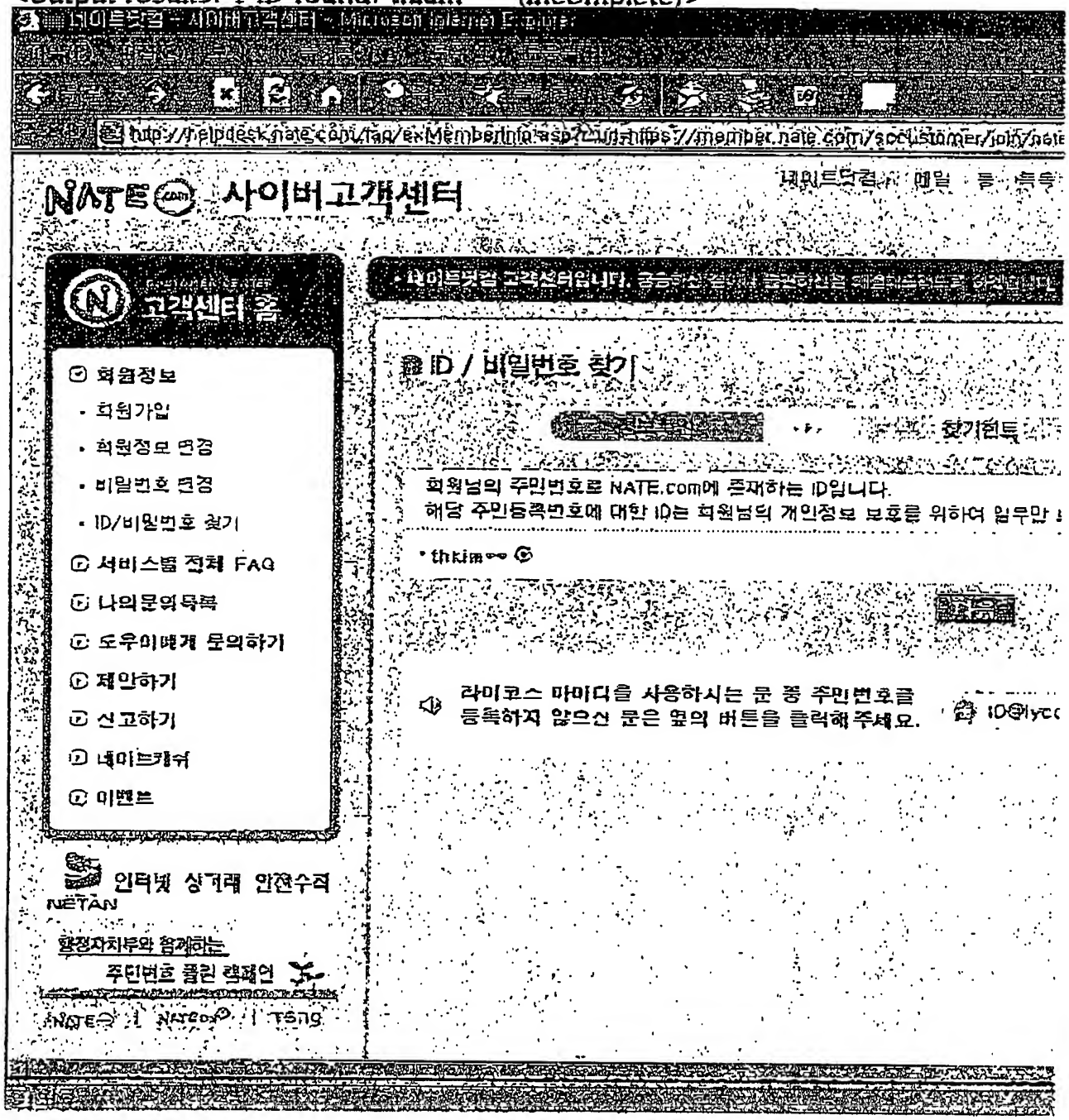
(5) Search from www.nate.com
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



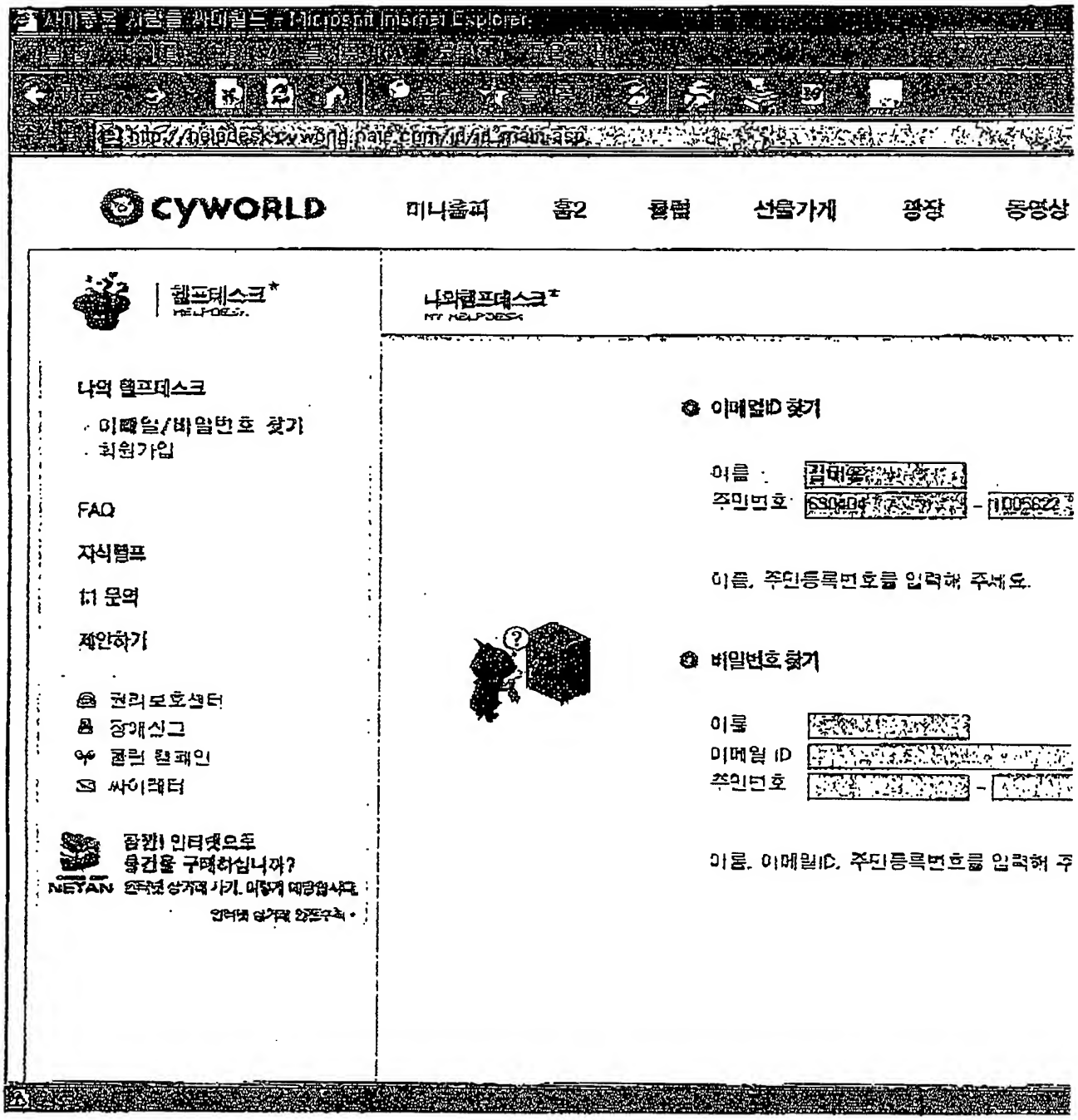
2007-05-12

<output results: 1 ID found: thkim*** (incomplete)>



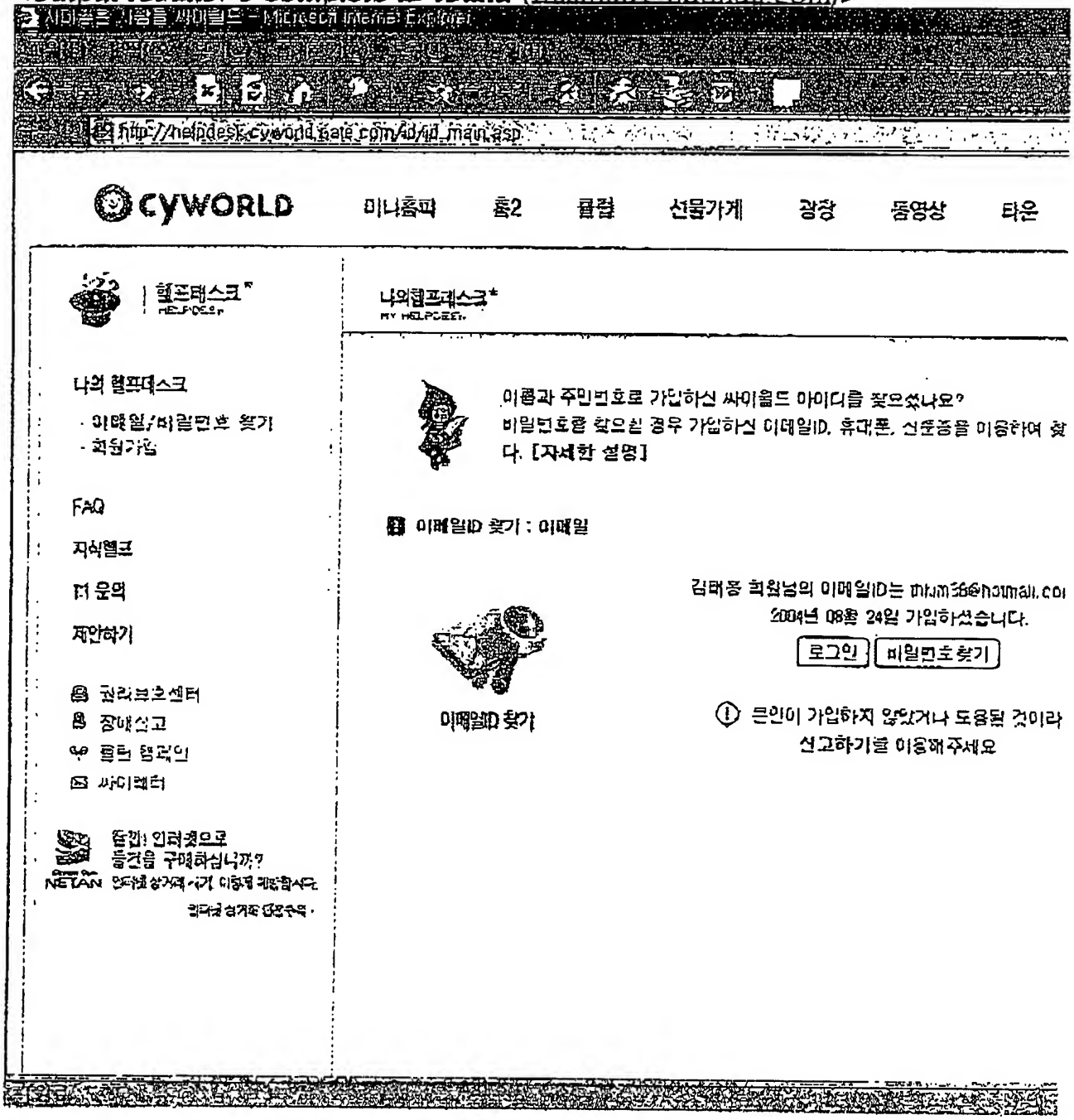
(6) Search from www.cyworld.co.kr
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



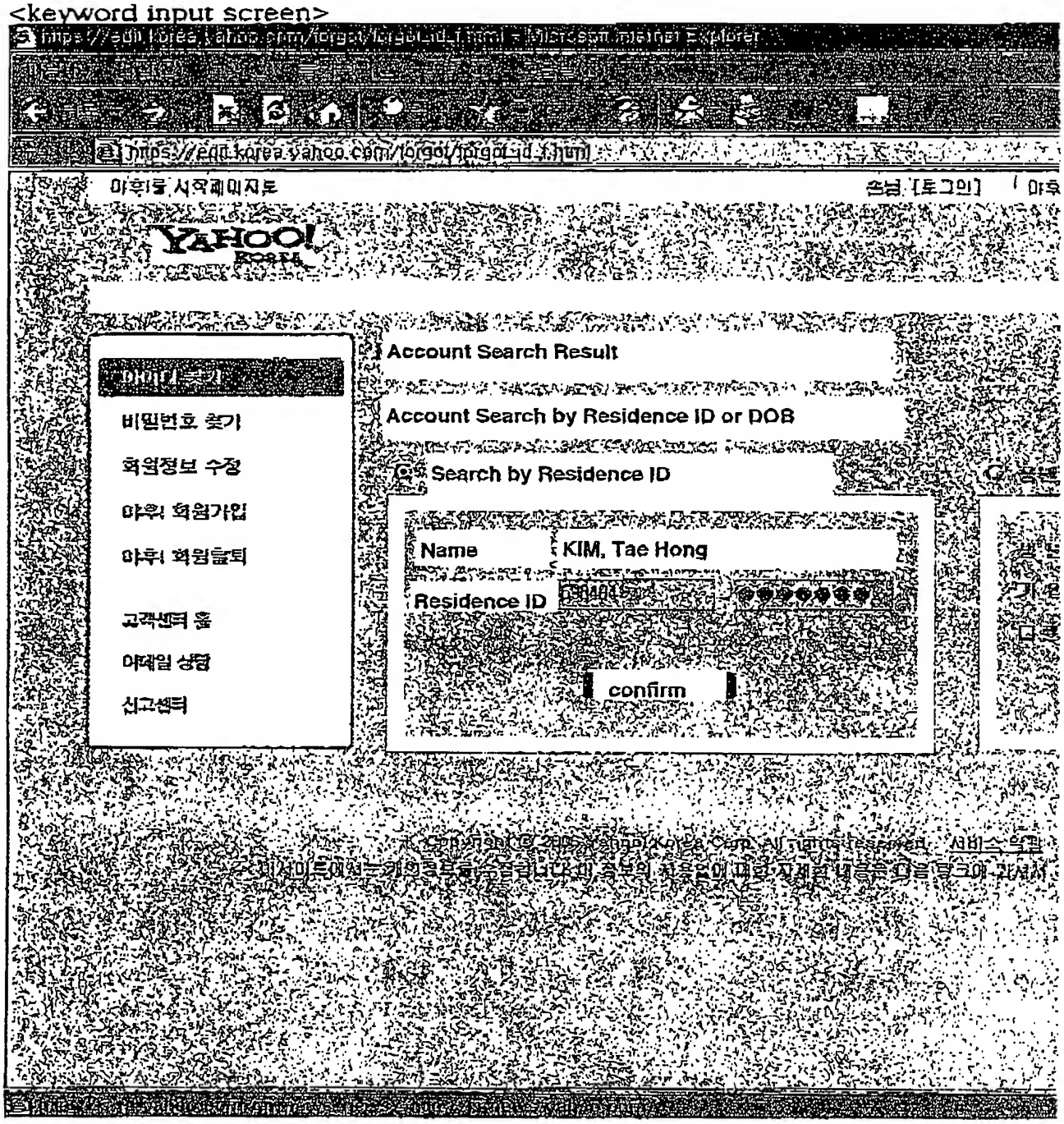
2007-05-12

<output results: 1 complete ID found (rhkim38@hotmail.com)>



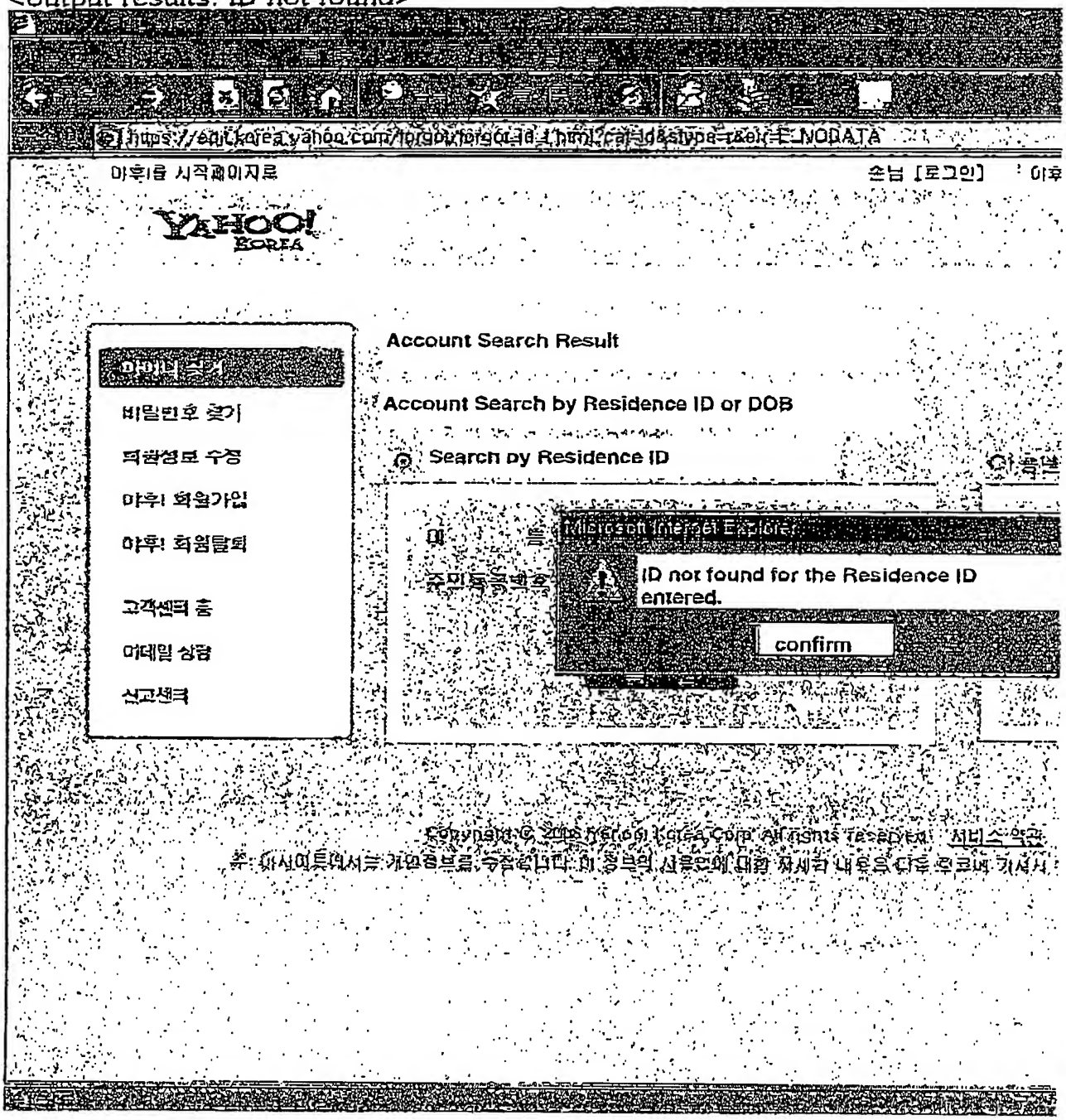
(1) Search from www.yahoo.co.kr
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



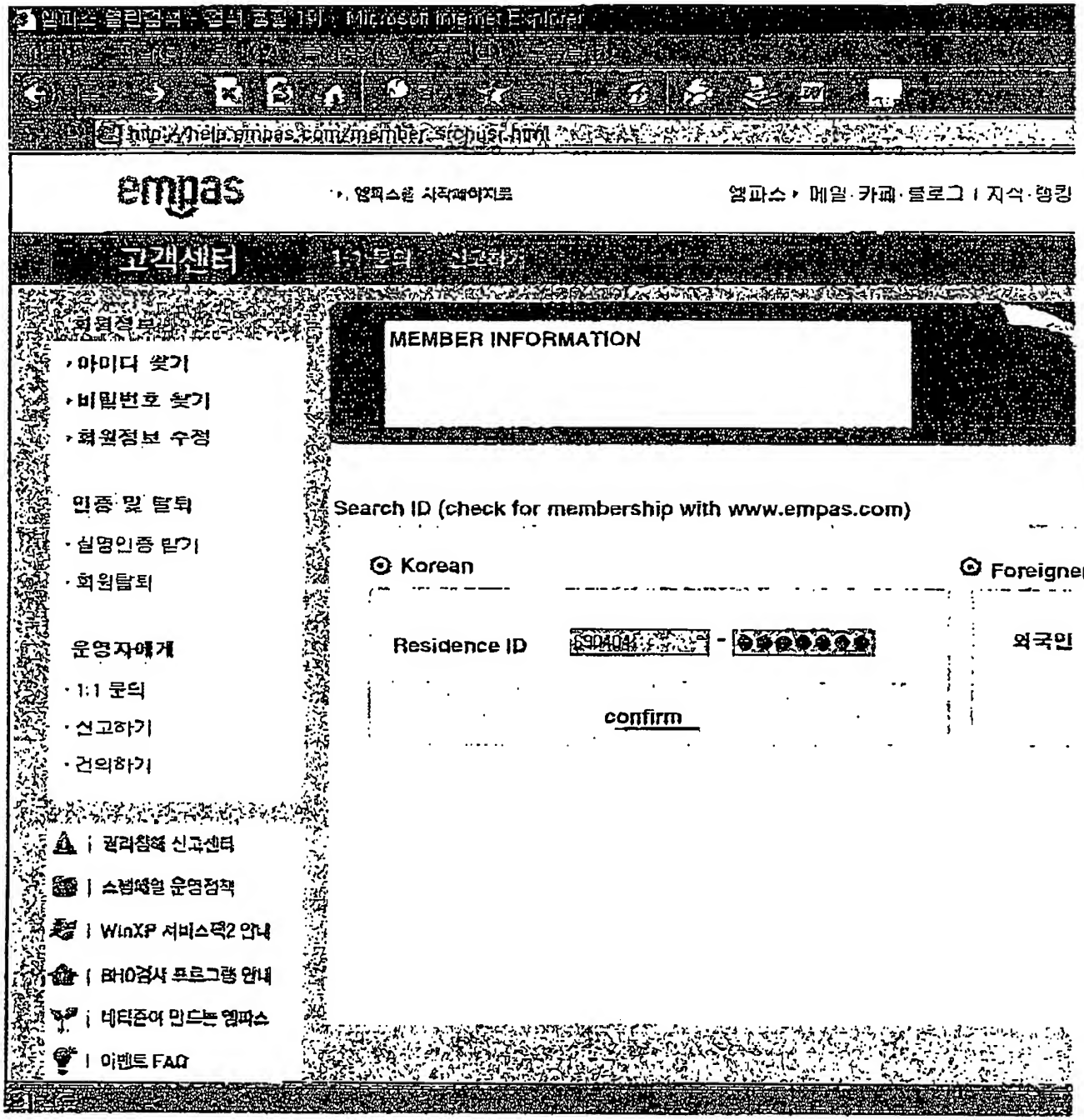
2007-05-12

<output results: ID not found>



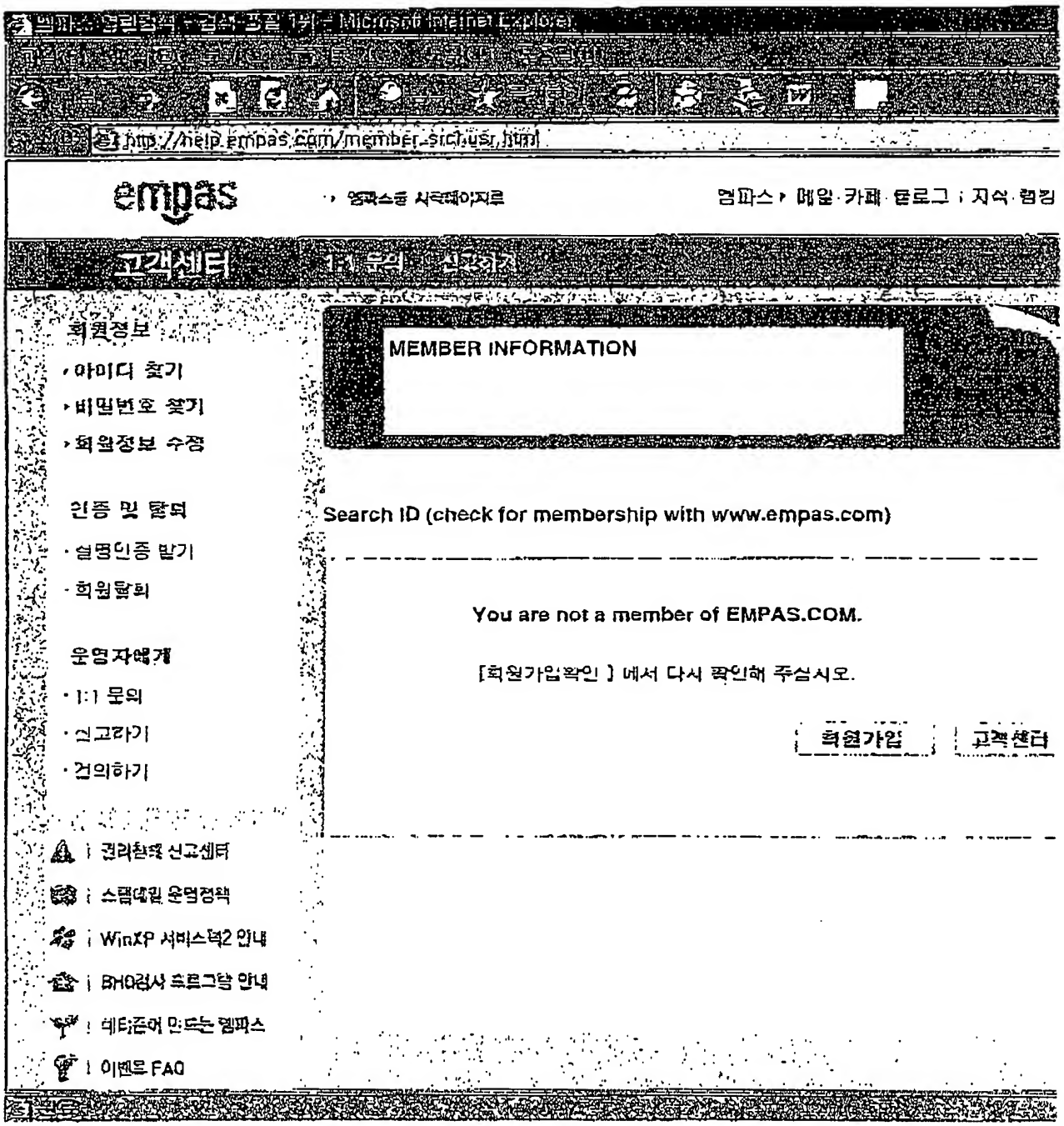
(2) Search from www.empas.com
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



2007-05-12

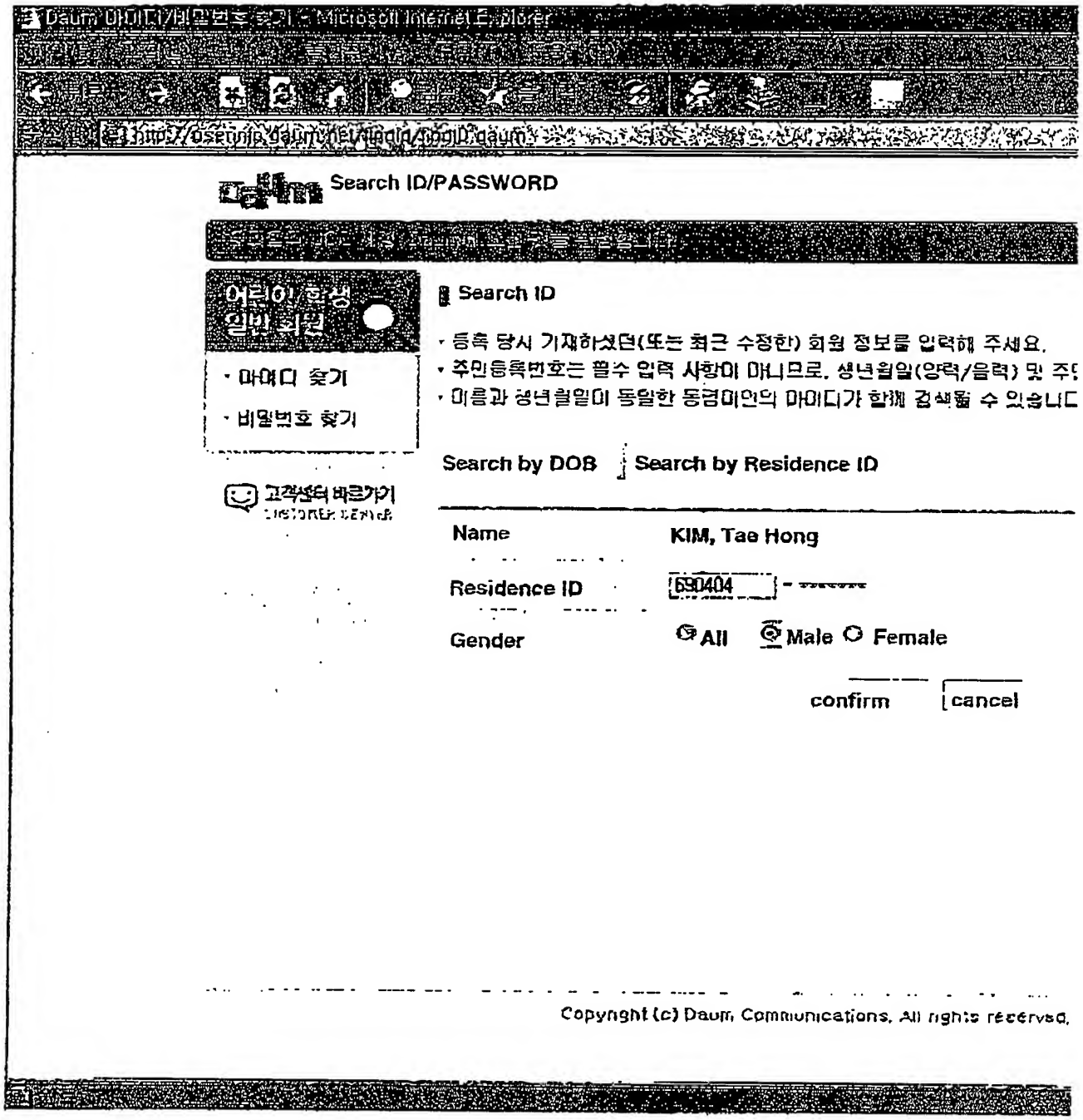
<output results: ID not found>



2007-05-12

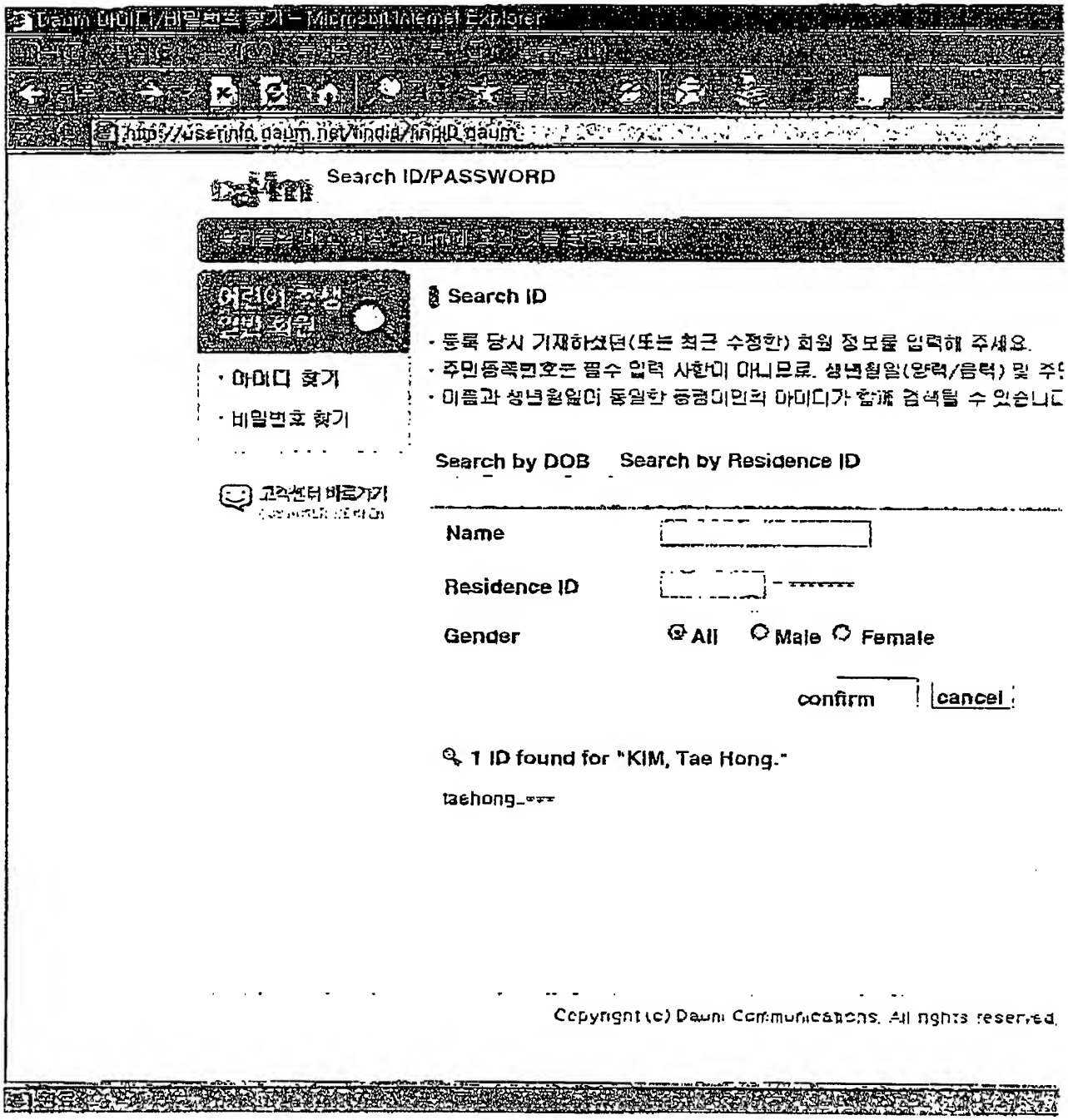
(3) Search from www.daum.net
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



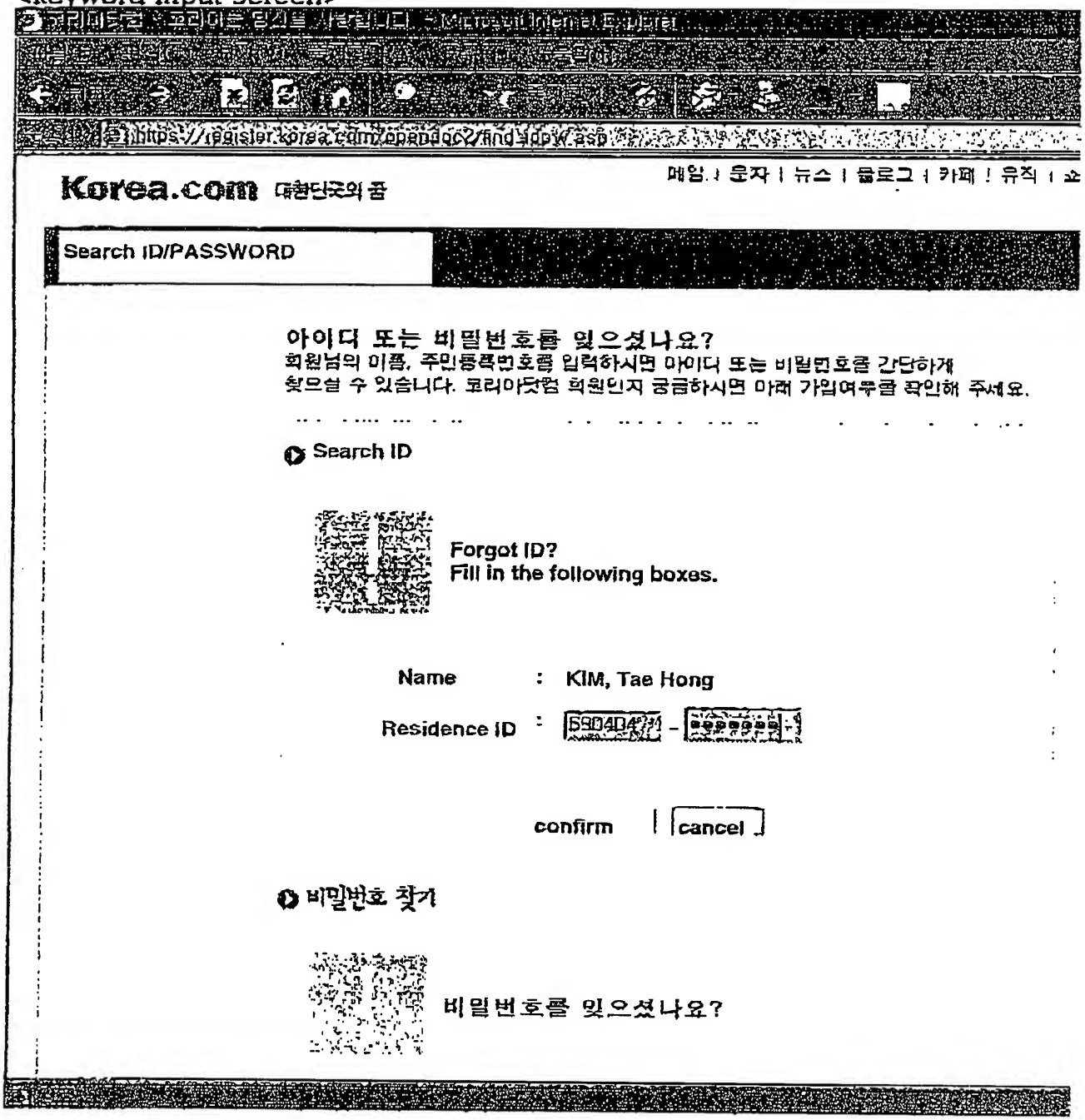
2007-05-12

<output results: 1 ID found: taehong_*** (incomplete)>



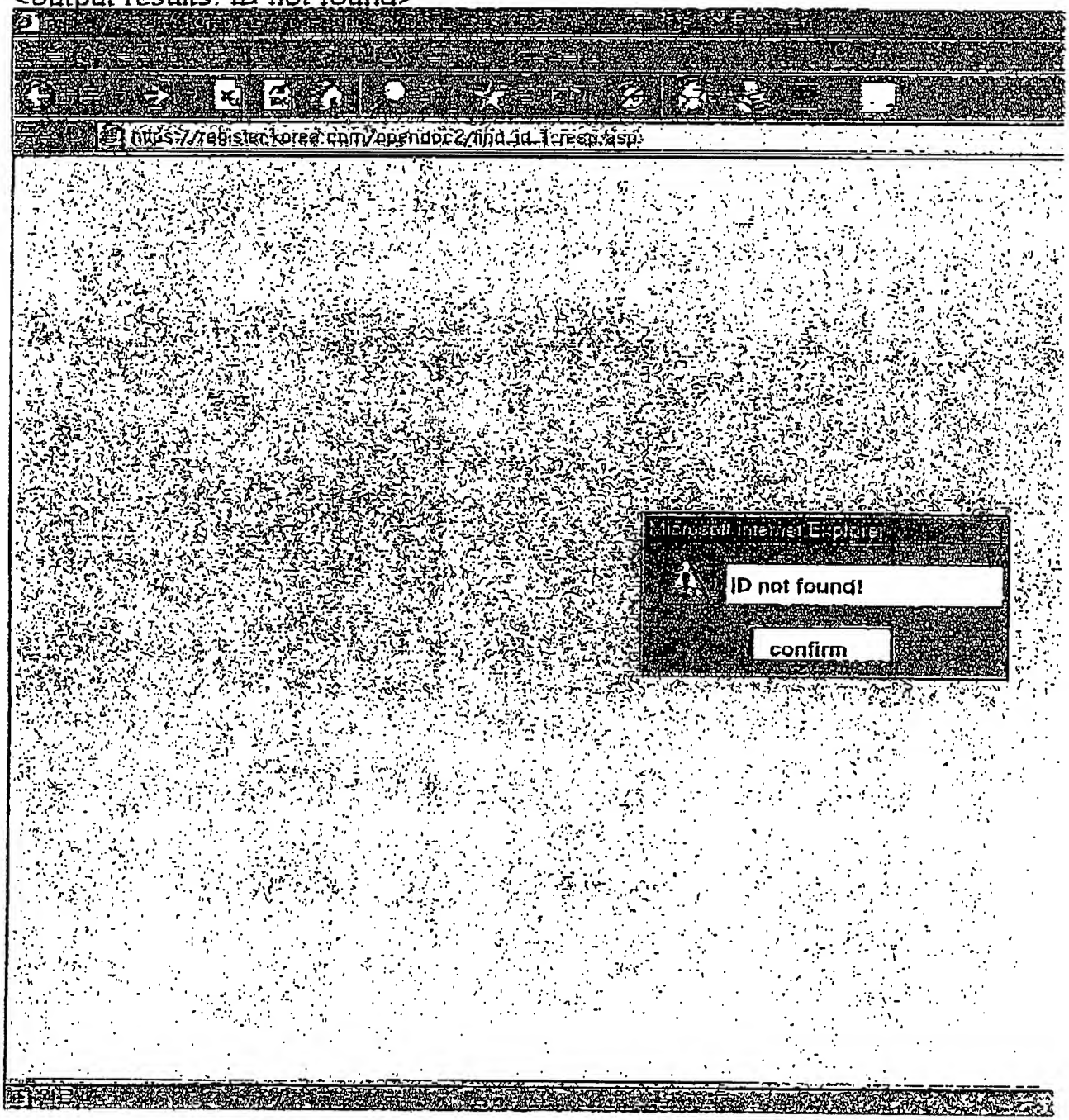
(4) Search from www.korea.com
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



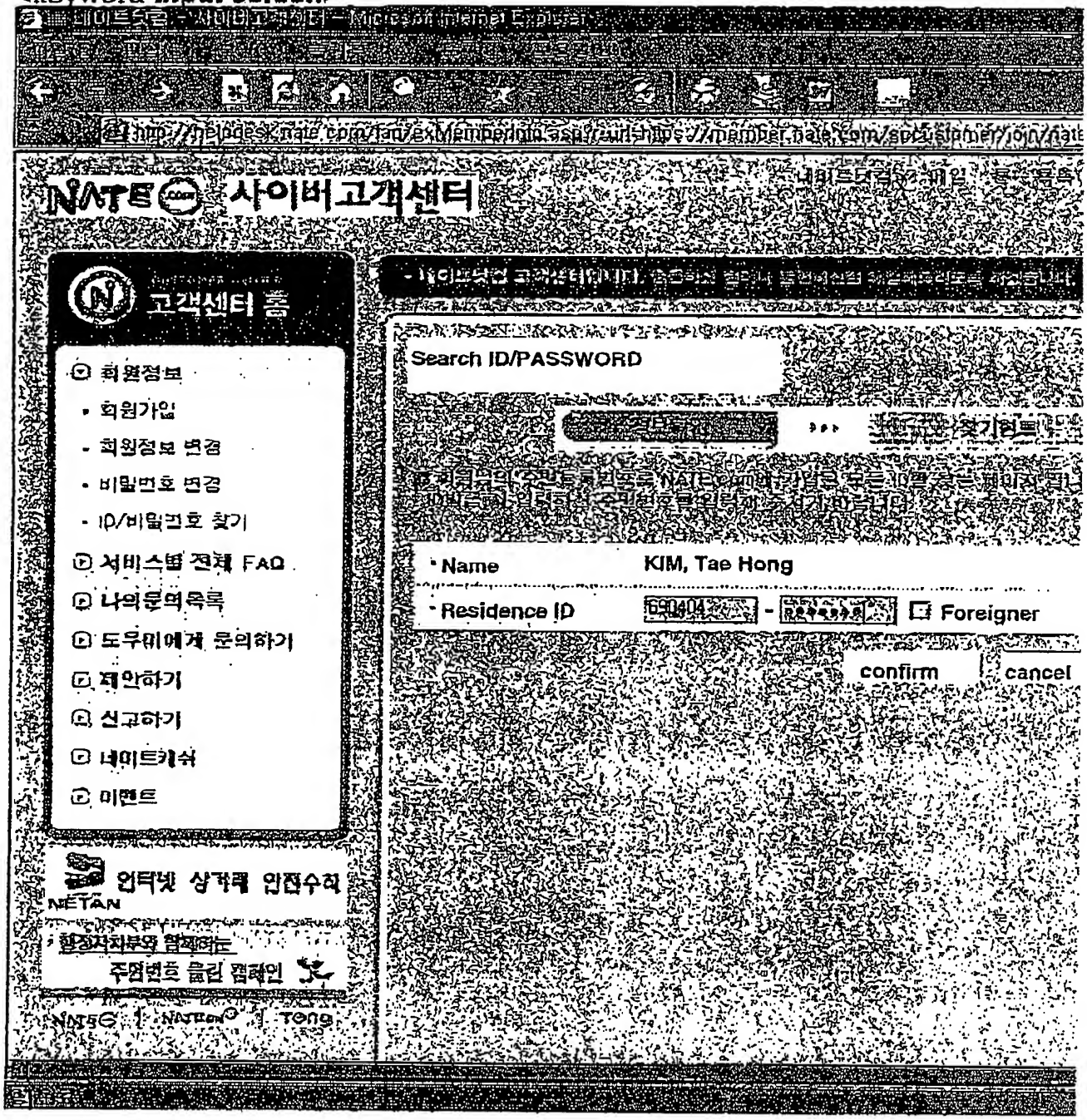
2007-05-12

<output results: ID not found>



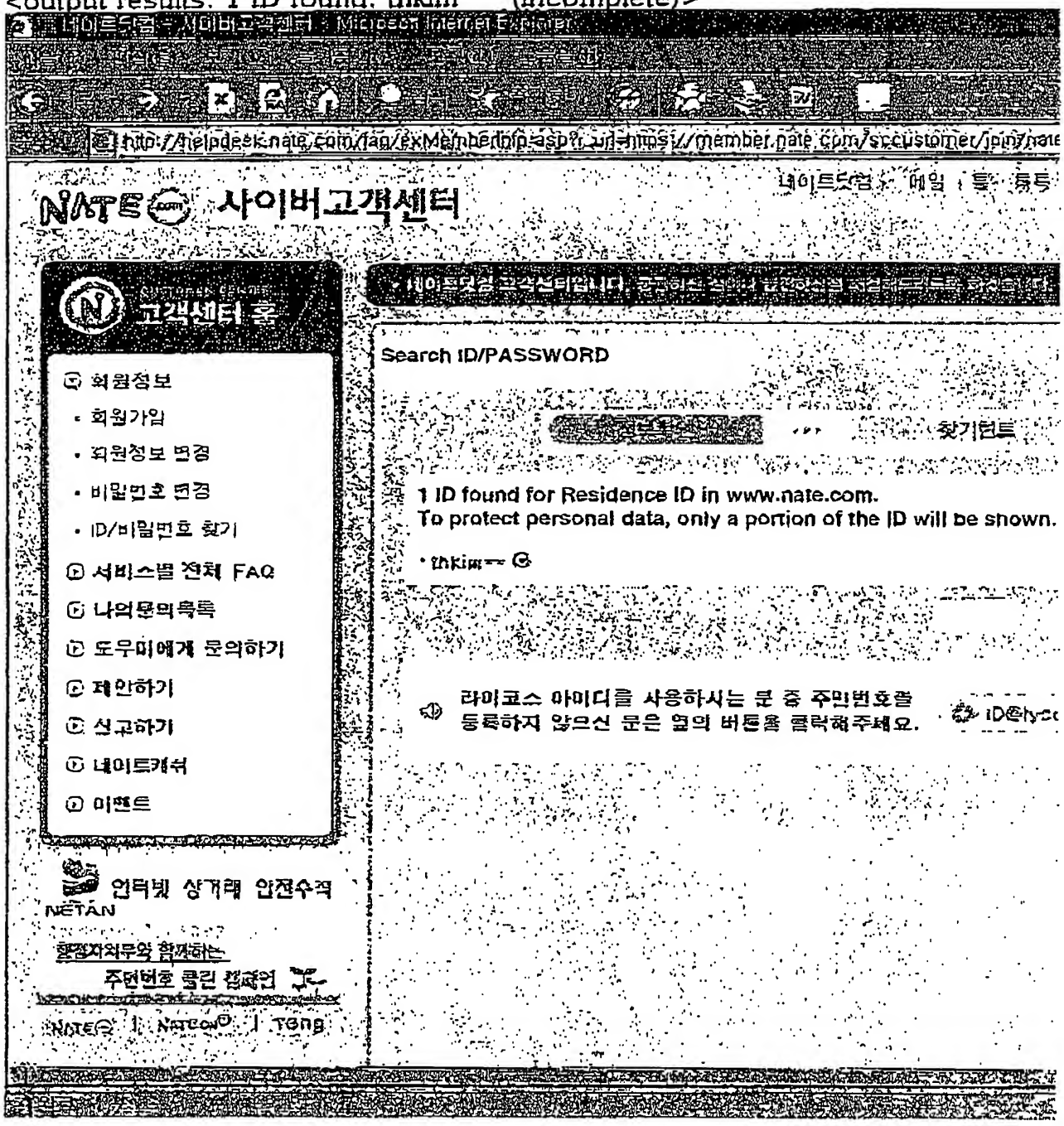
(5) Search from www.nate.com
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



2007-05-12

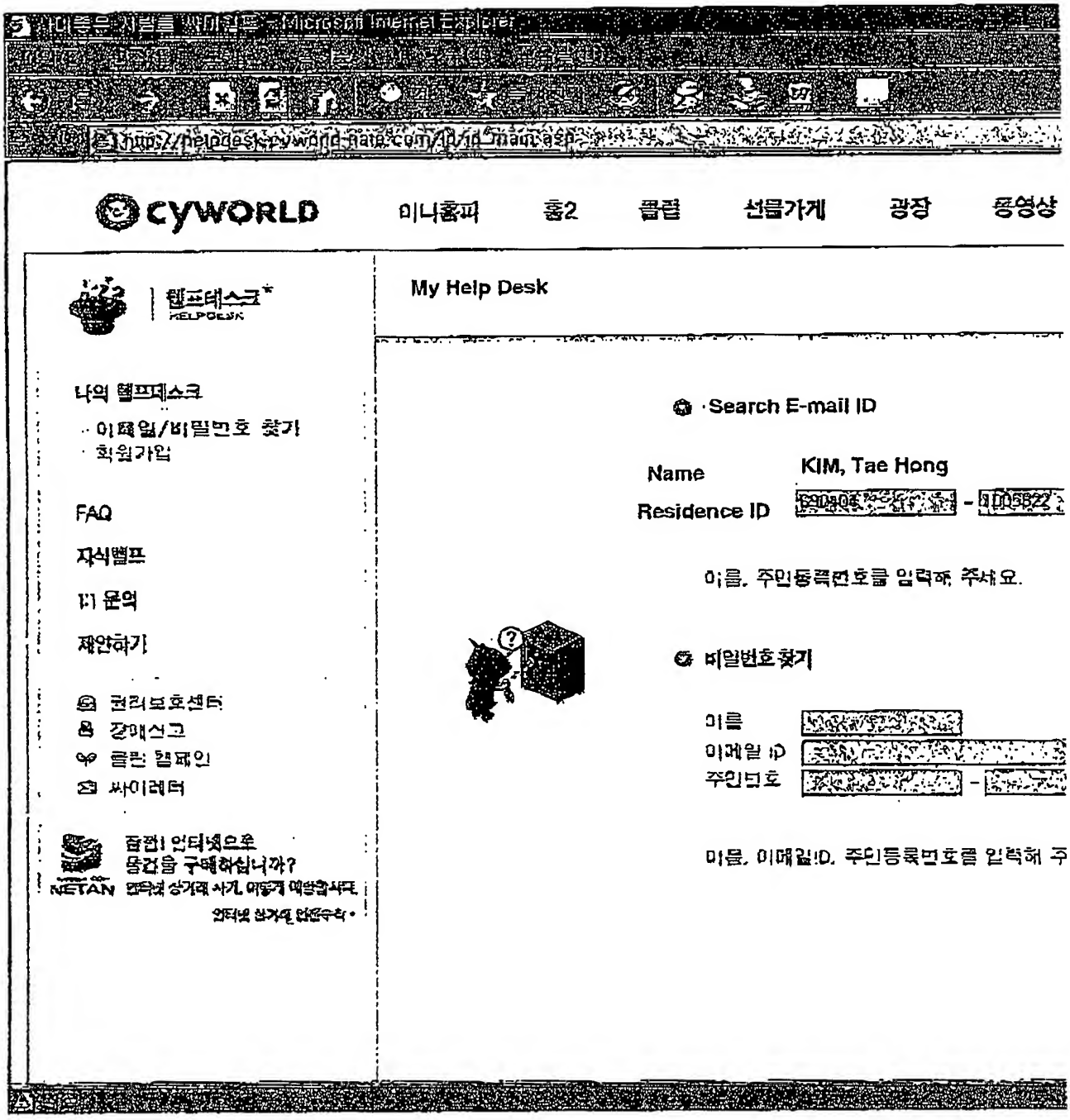
<output results: 1 ID found: thkim*** (incomplete)>



2007-05-12

(6) Search from www.cyworld.co.kr
Web-mail account search: keywords "KIM, Tae Hong in Korean" & "690404-1005822" (Residence ID)

<keyword input screen>



2007-05-12

<Output results: 1 complete ID found (thkim38@hotmail.com)>

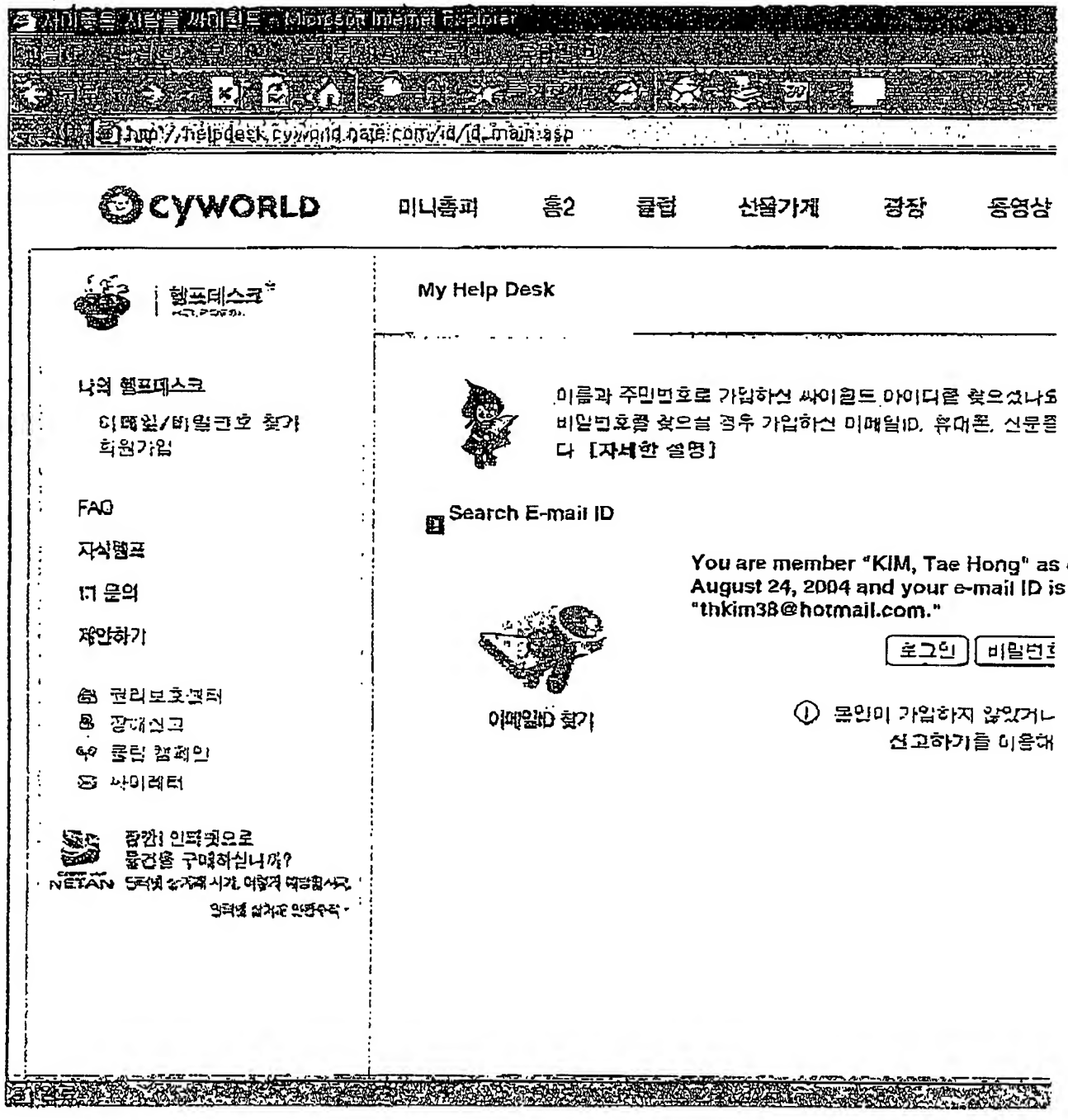


EXHIBIT 4

[Translation]

[E-mail to the inventor Tae Hong Kim from K&C staff, Jiwon Lim]

From: zjwlim (Ji-Won Lim)
Date: February 28, 2007 5:26 PM
To: thkim38@hotmail.com
Cc: jykim1 (Joo-Young Kim)
Subject: [To. Mr. Tae Hong Kim] An announcement from Law offices of Kim & Chang (FE251547)
Attachment(s): FE251547-THK-LETTER,INVENTION DISCLOSURE. pdf
FE251547-THK –SIGNATURE DOCUMENTS.pdf
05-507-B-Specification.pdf

To: Mr. Tae Hong Kim
San 136-1, Ami-ri, Bubal-eub, Icheon-si, Gyeonggi-do 467-860, Republic of Korea
Re: U.S. Patent Application No. 10/585,602 (Our Ref. FE251547)

Dear Mr. Kim,

We hope your business is prospering.

We are attorneys for a law firm, Kim & Chang, and contacting you on behalf of our client UTStarcom Korea Limited.

You had assigned your invention as identified on the next page to your former company in 2002, which was conceived when you were working for Hyundai Electronics Industries, Co., Ltd./ Hyundai Syscomm, Inc. under the provisions of the employee's invention compensation policy of the company. Therefore, the right to receive patent for the invention was transferred to the former company. Recently, the right to receive patent was transferred to our client, UTStarcom Korea Limited, hereinafter referred to as "UTSK" from your former company. With respect to this invention, a Korean patent application was filed and its counterpart U.S. patent application has recently been filed with the U.S. Patent and Trademark Office. According to the U.S. Patent law, the inventor is only entitled to be an applicant for a patent application. Therefore, although the right to receive patent has been transferred to our client, UTSK, the U.S. Patent and Trademark Office requires filing of documents as enclosed herewith which must be signed by the inventor.

With regard to the assignment, please be informed that signing the enclosed assignment does not mean that you newly transfer something another to somebody, it merely means confirming that you had already assigned the right to receive patent in 2002. As for

[Translation]

the Declaration, the signing the declaration means that you are declaring that you are the true and sole inventor of this invention.

As explained above, I enclose herewith these signature documents together with the specification as filed with the U.S. Patent and Trademark Office. Please review them and sign and date the marked portions, and return them to us via courier, registered mail or whatever is convenient for you. Any costs to be incurred in this connection are surely responsible to our side. Please send us any receipts for payment in return.

If you have any other questions, please contact the person as below.

Law Offices of Kim & Chang
Patent Attorney Joo-Young Kim (Tel. 02-2122-3561)
Assistant Manager Jiwon Lim (Tel. 02-2122-3838)

US 10/585,602
DOC.4-1

zjwlim (Ji-Won Lim)

보낸 사람: zjwlim (Ji-Won Lim)
보낸 날짜: 2007년 2월 28일 수요일 오후 5:26
받는 사람: 'thkim38@hotmail.com'
참조: jykim1 (Joo-Young Kim)
제목: [김태홍님]김.장법률사무소입니다 (FE251547)
첨부 파일: FE251547-김태홍-안내문,발명신고서.pdf; FE251547-김태홍-서명서류 pdf; 05-507-B-Specification pdf

수 신 : 김태홍 님
경기도 이천시 무랍읍 아미리 산 136-1 (우.467-860)
제 목 : 미국 특허 출원 제 10/585,602호
당소 정리 번호 : FE251547

귀하의 사업에 무궁한 발전을 기원합니다.

당스는 유티스타콤 크리아 유한회사의 대리인인 김장법률사무소입니다.

귀하께서는 2002년도에 현대전자산업 주식회사/현대시스콤 재직 중에 개발하신 아래의 발명에 대한 권리를 당시 소속회사의 직무발명 양도규정에 따라 소속회사에 양도하였으며, 현재 이 발명에 대해 특허를 받을 수 있는 권리는 귀하의 소속회사로부터 당소의 의뢰인인 유티스타콤 크리아 유한회사로 이전되어 있는 상태에 있습니다. 이 발명에 대하여는 한국 특허출원을 하고 이어서 현재 미국 특허출원을 진행 중에 있는데, 미국의 특허제도에 따르면 출원시 발명자가 출원인이 되어야 하기 때문에 미국 특허청은 특허를 받을 수 있는 권리가 당소의 의뢰인에게 있다 하더라도 첨부된 바와 같은 서류에 출원인으로서 발명자가 직접 서명한 후 이를 제출하도록 요구하고 있습니다.

첨부된 서류 중 양도증(assignment)과 관련해서는, 귀하께서 이미 이 발명에 대한 권리를 양도한 상태이기 때문에 첨부된 양도증은 이를 확인하는 절차에 불과하며 새로이 무언가를 양도하는 것은 아님을 알려드립니다. 발명자 선언서(declaration)는 귀하께서 이 발명의 발명자임을 선서하는 내용으로 되어 있습니다.

이와 같은 사정으로 상기 서명서류 및 미국특허청에 제출된 명세서를 보내드리오니 검토 및 서명 후 당스로 반송하여 주시기를 부탁드립니다. 반송은 퀵서비스(착불) 등 귀하께서 편한 방법으로 아래의 당소 주소로 해 주시고 어떤 경우에든 당소에서 비용을 부담할 것이오니 비용 영수증 등도 함께 반송하여 주시면 감사하겠습니다.

문의사항이 있으시면 아래의 담당자 연락처로 연락주시기 바랍니다.

김.장법률사무소
변리사 김 주 영 (전화: 02-2122-3561)
과장 임 지 원 (전화: 02-2122-3838)

첨부물있음: 2006년 12월 1일자 당소서신 및 발명신고서
서명서류(발명자선언서 및 양도증)
미국특허청에 제출된 명세서

Ji-Won Lim
zjwlim@ip.kimchang.com
직통 : (02) 2122 3838

金·張 法律事務所
서울시 종로구 신문로 1가 226 흥국생명빌딩 9층 우편번호 110-786
전화: (02) 764-8855 / (02) 2122-3900 (대표)
팩스: (02) 741-0328 / (02) 745-5954 / (02) 763-7434

2007-02-28

金·張 法律事務所
KIM & CHANG

서울시 종로구 신문로 1가 226 흥국생명빌딩 9층 우편번호 110-786
전화: (02) 764-8855 / 2122-3900 Fax: (02) 745-5954 / 741-0328 / 763-7434
E-Mail: all@ip.kimchang.com

2006년 12월 1일

수 신 : 김 태 홍 님
경기도 이천시 부발읍 아미리 산 136-1 (우. 467-860)

제 목 : 미국 특허청 제출용 서명서류 송부의 건 (U.S Serial No. 10/585,602)
당소 정리 번호 : GP048360 (FE251547)

귀하의 사업에 무궁한 발전을 기원합니다.

당소는 유티스타콤 코리아 유한회사의 대리인인 김&장 특허법률사무소입니다.

귀하께서는 2002년도에 현대전자산업 주식회사/현대시스콤 재직 중에 개발하신 아래의 발명에 대한 권리를 당시 소속회사의 직무발명 양도규정에 따라 소속회사에 양도하였으며, 현재 이 발명에 대해 특허를 받을 수 있는 권리는 귀하의 소속회사로부터 당소의 의뢰인인 유티스타콤 코리아 유한회사로 이전되어 있는 상태에 있습니다. 이 발명에 대하여는 한국 특허출원을 하고 이어서 현재 미국 특허출원을 진행 중에 있는데, 미국의 특허제도에 따르면 출원시 발명자가 출원인이 되어야 하기 때문에 미국 특허청은 특허를 받을 수 있는 권리가 당소의 의뢰인에게 있다 하더라도 첨부된 바와 같은 서류에 출원인으로서 발명자가 직접 서명한 후 이를 제출하도록 요구하고 있습니다.

첨부된 서류 중 양도증(assignment)과 관련해서는, 귀하께서 이미 이 발명에 대한 권리를 양도한 상태이기 때문에 첨부된 양도증은 이를 확인하는 절차에 불과하며 새로이 무언가를 양도하는 것은 아님을 알려드립니다. 발명자 선언서(declaration)는 귀하께서 이 발명의 발명자임을 선서하는 내용으로 되어 있습니다.

이와 같은 사정으로 첨부 서류를 보내드리오니 서명 후 당소로 반송하여 주시기를 부탁드립니다. 반송은 퀵서비스(착불) 등 귀하께서 편한 방법으로 아래의 당소 주소로 해 주시고 어떤 경우에든 당소에서 비용을 부담할 것이오니 비용 영수증 등도 함께 반송하여 주시면 감사하겠습니다

이 우편물은 2006.12.01 제 070026735
로에 의하여 내용증명우편물로
발송하였음을 증명함
광화문 우체국장

반송 주소: 서울시 종로구 신문로 1가 226 흥국생명빌딩 9층 김.장특허법률사무소
(우편번호 110-786)

발명의 명칭: APPARATUS AND METHOD FOR DUALIZING AN ASYNCHRONOUS TRANSFER MODE (ATM) ROUTER IN A CDMA 2000 SYSTEM

-담당자: 김 주 명 변리사 / 윤 지 홍 변리사
-전화: 02-2122-3561 / 02-2122-3515
-E-mail: jykim1@ip.kimchang.com

변리사 윤 지 홍

첨부있음.

HYUNDAI SYSCOMM 社外秘

직무 발명 신고서

신고일:2007년 11월 30일

발명실	결재	업무코드		승인권자	책임관리자	검토	법제특허무	결재	업무코드		승인권자
		주발명자	검토	팀장					기안	검토	부원
	직위/성명	DL/김태용	/	CJ/정현		/		직위/성명			/
	입 자	11월27일	/	11/30	관리번호			입 자			
	보존년한	0.1.2.3.5 10.영구						보존년한	1.3 5.10.영구	보안등급	1.2.3 대외비

사내 직무발명보상기준에 의거하여 출원/등록을 의뢰하며, 국내/외 등록권리를 양도합니다

발명자 기재사항

발명의 명칭	시스템운용상태유지 및 이중화
발명의 개요	BSC에 이용되는 ATM router(ASB)를 구성하는 두장의 ASPA board의 운용정보를 어떠한 경우(두장다 동작, 한장만 동작)에도 항상 내부 운용상태정보를 동일하게 유지하는 이중화 구조이다.
관련PROJECT명	KTF cdma2000 1x 시스템
실시상황	□ 착상 □ 설계완료 ■ 시험(중,완료) □ 사업화(준비중,실시중)
본발명의 발표상황	■ 미발표 □ 발표예정 □ 旣발표 ※旣발표 또는 발표 예정인 경우 발표(예정)일과 관련논문등 기입 요망 [발표(예정)일:2000년 월 일, 관련논문:]
선행특허자료	국 내
	외 국
출원완급	■ 보 통 / □ 지 급 -->(일이내) / 지금출원 이 유
외국출원	□ 유 (이유:) ■ 무
KEY WORD	SCMB이중화

법제특허무 기재사항

접수일	2007년11월30일	대리인	허남근	전담자관리번호 CM2007-12-0561
국내출원	☑ 특허 □ 실용 □ 공개기보 □ 출원보류(이유:)			
외국출원	심사청구	□ 유 ☑ 무	전략특허PROJECT명	고3
	□ 유 □ 무		출원등급	B
	심의여부	□ 유 □ 무	*대리인 특허명세서작성 참조사항*	

출원국가선정

□ 개별국출원 □ EPO출원 □ PCT출원

1순위		5순위	
2순위		6순위	
3순위		7순위	
4순위		8순위	
비고			

□ 사무소 자체 국내출원 ☑ 특허팀검토후 국내출원
□ 국내외 동시출원

검토의견: OK

DOC.4-8

HYUNDAI SYSCOM㈜ 社 外 秘

발명실장 기재사항

< 발명 평가내용 >

구 분	내 용	평가점수
기 술 성	단순 조합 기술임	□ 1점
	약간 높은 수준을 요하는 기술임	☑ 3점
	고도의 수준을 요하는 기술임	□ 5점
실현가능성	이론상 실현은 가능하나, 실험계획은 없음	□ 1점
	테스트 하려면 관련기술의 발전이 요구됨	□ 2점
	테스트중이거나 예정임	□ 3점
	양호한 테스트 결과 얻음(자료정부 가능)	□ 5점
	현재 사업화 준비중 또는 실시중임	☑ 7점
효 과	개선된 효과의 수준은? (공정 단순화, Yield, Cost 등의 측면)	□ 3점 ☑ 2점 □ 1점
발명품요도	기술공개로 타사 권리확보를 방어하는 수준임	□ 1점
	양산에 적용(예정) 가능한 발명임	☑ 3점
	반드시 필요한 독점 기술임	□ 5점
평가결과		(15) 점

주)※상기 발명 평가표는 반드시 실장이 직접 기재하시기 바랍니다.
※"실현가능성"란에서 5점,7점에 해당된 발명은 증빙 자료가 반드시 필요 합니다.
※평가를 완료하신후 평가결과를 기입 바랍니다.

< 외국출원 평가내용 >

발명의 적용제품 현 황	•적용제품: •관련기술: •적용시기:	•특수제품에 적용되는 경우 필수 기재하시기 바라며, 향후 적용 제품경우 예상시점을 기재요망
평가내용	□ 절대 필요 □ 국내출원후 1년간 관망 □ 필요 없음	출원희망국가
	□ 개별국출원, □ EPO출원, □ PCT출원	1순위 / 2순위 / 3순위
	기술적측면	4순위 / 5순위 / 6순위 / 7순위 / 8순위
	경제적측면	평가자 성명: 직위: 서명:

HYUNDAI SYSCOMM 社 外 秘

발명자 인적사항

발명자 1	성명	(한글) 김 태 홍	(S/W) 개발 Group	(네트웍)실			
		(한문) 金 泰 洪	직위	대리	사번	H14933	TEL (6907)
		(영문) Kim Tae Hong	주민등록No				
	E-mail	taehong@hysyscomm.com	주소	(467-701)경기도 이천시 루람읍 아미리 산136-1		서 명	
발명자 2	성명	(한글)	( ) 개발 Group	( )실			
		(한문)	직위		사번		TEL ( )
		(영문)	주민등록No	-			
	E-mail		주소	(-)		서 명	
발명자 3	성명	(한글)	( ) 개발 Group	( )실			
		(한문)	직위		사번		TEL ( )
		(영문)	주민등록No	-			
	E-mail		주소	(-)		서 명	
발명자 4	성명	(한글)	( ) 개발 Group	( )실			
		(한문)	직위		사번		TEL ( )
		(영문)	주민등록No	-			
	E-mail		주소	(-)		서 명	
발명자 5	성명	(한글)	( ) 개발 Group	( )실			
		(한문)	직위		사번		TEL ( )
		(영문)	주민등록No	-			
	E-mail		주소	(-)		서 명	
발명자 6	성명	(한글)	( ) 개발 Group	( )실			
		(한문)	직위		사번		TEL ( )
		(영문)	주민등록No	-			
	E-mail		주소	(-)		서 명	

※1. 주소는 상세히 기재하시고, E-mail은 반드시 *회사계정*으로 기재하시기 바람.
2. 영문기재시 Fullname을 기재하시기 바람.

DOC.4-10

HYUNDAI SYSCOMM 社 外 秘

발명의 명세서

1. 발명의 명칭

발명의 실질적 내용에 대해 가장 적절히 표현할수 있는 명칭을 간결하고 명확하게 기재하되 약자는 가급적 피해주시기 바람.

시스템운용상태유지 및 이중화 .

2. 발명의 상세한 설명

1)산업상의 이용분야

발명이 무엇에 관한 것이며,어느 기술분야에 적용되는지를 기재하고,타 기술 분야에서도 활용이 가능하면 그 기술분야도 기재하시기 바람.

통신시스템의 운용 및 제어기능을 하는 프로세서가 이중으로 존재할때 이 두 프로세서가 가지고 있는 운용 및 상태정보를 항상 일치시키는 기능 및 구조이며, 운용보존기능이 이중화되어 있는 모든 통신시스템에 이용될 수 있다.

2)종래기술의 설명 및 그 문제점

*본 발명이 속하는 기술분야에서 본 발명과 연관되는 종래기술이 어떻게 실시되는지 기술적 구성이나 개요를 비교적 상세히 설명하고,그 문제를 기재하기 바람.
*본 발명과 관련된 참고문헌이나 특허공보가 있으면 문헌명이나 공보번호를 기재하고, 그 자료를 본 명세서에 첨부하시기 바람.

기존에 사용했던 시스템도 운용보전 프로세서 (이하 SCMB)가 구동되는 MAIN CPU BOARD (이하 ASPA)가 똑같이 두장이었고 , 어느정도 이중화 기능이 존재하였다.
그렇지만, 그 이중화 방식이 적지 않은 문제점을 가지고 있었다.
예를 들면, 처음 시스템 기동시 두장의 ASPA가 동시에 살아나지 않고 . 한장만이 기동된 상태에서 나머지 한장이 기동되게 되면 두 ASPA가 상이한 정보를 가질 수 있다.
이유는 ASPA는 처음 기동될 때 ASPA가 관리하는 ATM CARD 및 SWITCH CARD로 부터 정보메세지를 수신하여 해당 카드들의 관련정보를 구성하고 운제점 발생시 또는 상태변경필요시 이 관련정보를 변경한다.
그런데, 만약 처음 기동한 ASPA가 수신한 피관리 CARD들의 메세지와 두번째 기동한 ASPA의 수신 메세지 갯수가 틀릴수 있다.(메세지 유실)
또한, 이 메세지에는 상태변경 및 문제점발생에 대한 정보가 들어있지 않기때문에 첫번째 ASPA의 기동시간과 두번째 ASPA 기동시간사이에 어떤 상태정보 변경사항이 발생했을 경우 두 SCMB는 다른 운용 및 상태 정보를 보유하게 된다. 그리고, 이러한 차이를 일치시키기 위해 두 SCMB간에 메세지를 주고 받지만, 그자체가 ASPA에 높은 부하가 작용하게 되며, 일치시키는 기간동안에도 상태정보변경이 일어날 수 있는 문제점이 있다. <그림 1 참조>

3)종래 문제점을 해결하기 위한 본 발명의 기술적 원리

*본 발명에서 상기와 같은 기술적 문제점을 어떻게 해결하고 있는지 그 해결책의 요지만을 기재하고, 그 상세한 설명은 다음항에 기재하기 바람.
*어떤 효과를 지닌 어떤기술을 사용하여 어떤 문제점을 해결하였다는 등

ASPA board에 전원이 공급되어 프로세서들이 구동될때 ASPA board 이중화를 담당하는 'dual'이라는 프로세서가 초기 2장의 ASPA가 동시에 구동될 경우 ftp Protocol로 먼저 기동되는 ASPA board의 DiskOnChip (Flash-rom)에 저장되어 있는 운용정보 file을 일시에 두번째로 기동되는 ASPA 의 DiskOnChip에 copy를 해준다. 그리고, copy된 ASPA board의 Global Parameter에 형상/운용정보 File이 copy되었음을 표시한다. <그림 2 참조>
이후, 기동되는 SCMB는 위 Glabal Parameter의 표시여부에 따라 DiskOnChip내용으로 피관리 board들의 운용상태정보를 생성하던지, 예하 Card들이 전송하는 메세지로 운용상태정보를 생성할지를 결정한다. 대부분의 경우 DiskOnChip내용으로 운용상태정보를 생성하므로 ASPA의 SCMB의 Load를 줄일수 있고, 일시에 File Copy를 수행하므로 두 ASPA의 정보차이를 줄인다.

4)본 발명의 구성 및 그 전반적인 동작설명

*본 발명은 본 발명이 속하는 기술분야 또는 연관된 기술분야에 종사하는 기술자라면 누구라도 실시할수 있을 정도로 상세하고도 정확한 표현으로 기재하시기 바람.

초기 ASPA 두장에 모두 전원이 공급되면 우선순위에 따라 ASPA내의 여러 프로세서가 생성된다. 그 구조는 초기 생성되는 프로세서가 다음순위의 프로세서를 생성시키고, 그 프로세서는 그 다음순위의 프로세서를 생성하는 식이다.
이때 초기에 생성되는 'DUAL'이라는 프로세서는 ASPA간 이중화를 담당하며, 상대 ASPA와 통신을 시도하여 지금의 시스템 상황이 SINGLE(ASPA 1장 기동)인지, DAUL ACTIVE/STANDBY (ASPA 2장기동)인지를 파악한다. 만약 현재의 상태가 SINGLE이라면 시스템 최초의 기동사항이므로 현재 DiskOnChip(FLASH ROM)에 저장되어 있는 운용정보가 없거나 의미없는 정보이다. 이럴경우 SCMB는 관리하는 LINECARD (ATM, SWITCH, CLOCK등)로 부터 전송되는 LineCard 내부정보를 이용하여 해당 Linecard 및 운용정보를 DiskOnChip에 저장하고 해당 운용정보를 사용 가능한 형태로 memory(D-RAM)에 객체구성을 한다.
그리고, 만약 2장의 ASPA가 동시에 기동했을 경우는 DUAL에서 자신의 ASPA board 상태가 DAUL ACTIVE (2장의 ASPA 중에서 먼저 기동하는 board) 인지 DUAL STANDY (2장의 ASPA 중에서 나중에 기동하는 board)인지를 판단한다. 그래서 만약 자신의 board가 DUAL ACTIVE 라면 dual 프로세서는 시스템운용 프로세서인 SCMB를 기동시킨다. SCMB는 자신이 관리하는 예하 Linecard로 부터 수신한 메세지를 이용해 SINGLE 일때와 마찬가지로 DiskOnChip에 정보를 저장하고 memory에 운용정보객체를 생성한다. 이와 같이 DUAL_ACTIVE가 정해진 순서에 의해 필요한 작업을 실행하는 동안 DUAL_STANDBY ASPA 보드의 DAUL 프로세서는 잠시 대기한다.
이후 ACTIVE쪽의 일정수준 작업이 진행되면 STANDBY ASPA쪽의 DUAL 프로세서가 FTP Protocol을 이용하여 ACTIVE쪽의 FTP Server에 접속한 후 DiskOnChip의 정해진 위치에 있는 형상운용정보 File(SystemReg.inf)을 복사해서 자신(STANDBY)의 DiskOnChip의 같은 Directory에 write한다. 그리고, Dual(STANDBY)은 Global Parameter인 Flag_Run_File_Copy 에 TRUE 값인 1을 setting 한다. 그다음 DUAL은 SCMB 프로세서를 기동시킨다.
SCMB는 초기생성시 DUAL 이 setting한 Global Parameter를 통해 자신이 속한 ASPA 보드가 DUAL_STANDY인 경우와 Flag_Run_File_Copy Parameter의 setting 값이 1인 경우 ACTIVE ASPA 보드의 현재 운용중인 운용File이 STANDBY의 DiskOnChip에 복사되었음을 인식하고 Standby ASPA상의 DiskOnChip에서 운용정보를 판독하여 자신(Standby)의 memory(D-RAM)에 해당 운용정보객체를 생성한다.

4) 함에서 계속

그리고 , 만약 두장으로 운용되던 ASPA중 한장의 ASPA가 탈장이나 Power-Off가 되었을시 나머지 한장이 SINGLE이 된다. 그리고 탈장이나 Power-Off된 ASPA가 다시 기동을 시작하면 기존의 SINGLE 이었던 ASPA는 DUAL_ACTIVE 가 되고 새로 기동하는 ASPA는 DUAL_STANDBY가 된다.
이후 진행되는 형상 및 운용의 이중화기능은 초기 ASPA가 두장 동시에 살았을 경우의 ACTIVE/STANDBY관계와 동일하다.
즉, STANDBY ASPA의 DUAL 이 ACTIVE로 FTP접속하여 형상운용File을 복사해오고, Global Parameter인 Flag_Run_File_Copy에 TRUE을 setting한다. SCMB는 DiskOnChip에서 정보를 얻어 Memory에 운용정보객체를 생성한다. < 그림 3 참조 >

5)본 발명의 다른 실시예

4)항에 기재된 본 발명의 주요 실시예 이외에 다른 실시예가 있으면 도면을 도시하고, 그 내용을 실시할 수 있을 정도로 구체화 하여 기재.

없음.

6)본 발명의 효과

본 발명과 종래기술과의 구성 및 동작의 차이에서 오는 효과를 구체적으로 기재하고, 부수적으로 발생되는 이점도 기재하나. 단 기술적인 근거가 없는 막연한 경제적 효과 등은 기재 불필요.

1. 기존 프로세서간 메시지 전송으로 이중화하던 방식대신 FTP를 이용한 File Copy를 구현함으로써 CPU 의 부하를 감소시킨다.

2. 이중화하는 기간이 단축되어 거의 양쪽 ASPA의 운용정보가 불일치할 가능성이 많이 줄어들었다

3. 차후 운용보전의 확장시 File구조체만 변경하면 되므로 구현량이 줄어든다.
(이중화를 위한 메시지 정의 및 변경 불필요)

3. 발명의 권리보호 범위

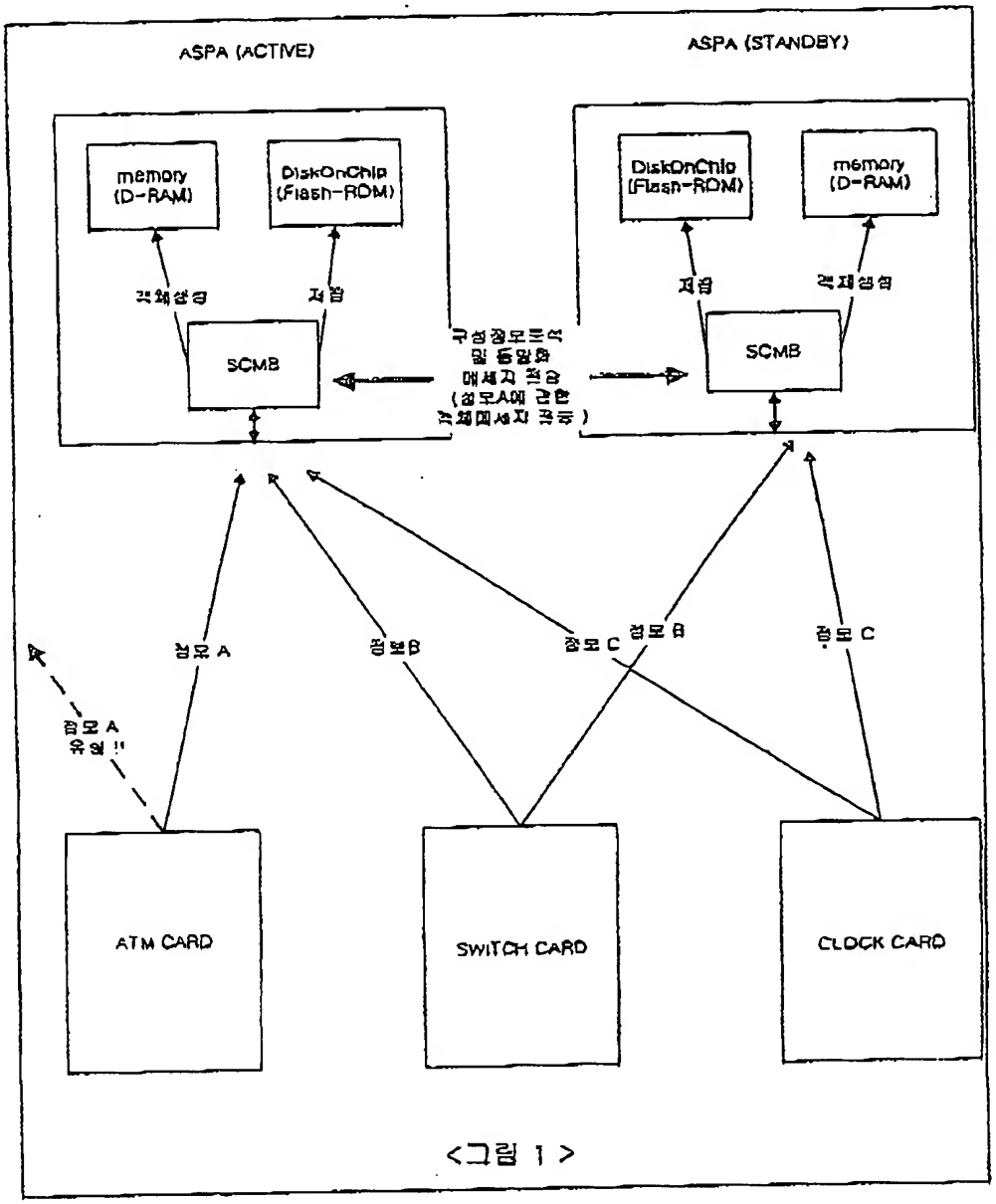
본 항은 발명의 명세서에 기재된 내용중 권리로서 보호 받고자 하는 사항을 기재하되, 본 발명에 의해 새롭게 창작된 구성 혹은 기능만을 기재함. 특히, 그중 보호를 받아야할 부분이나, 또 다른 실시예가 있는 경우 이를 다른 항으로 명확하고 간결하게 기재하시기 바람.

보드간의 이중화가 필요한 통신시스템 전체

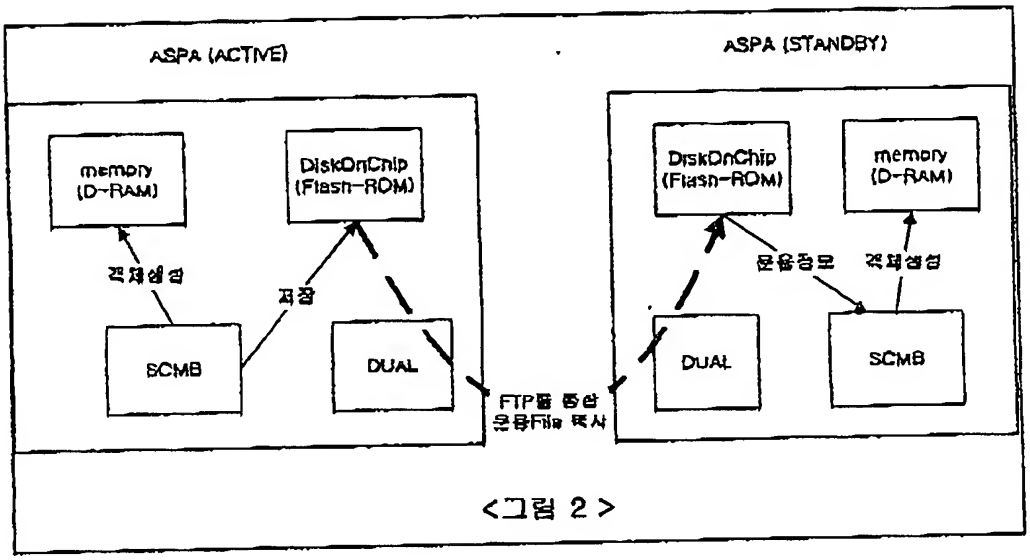
HYUNDAI SYSCOMM 社 外 秘

4. 도면의 간단한 설명

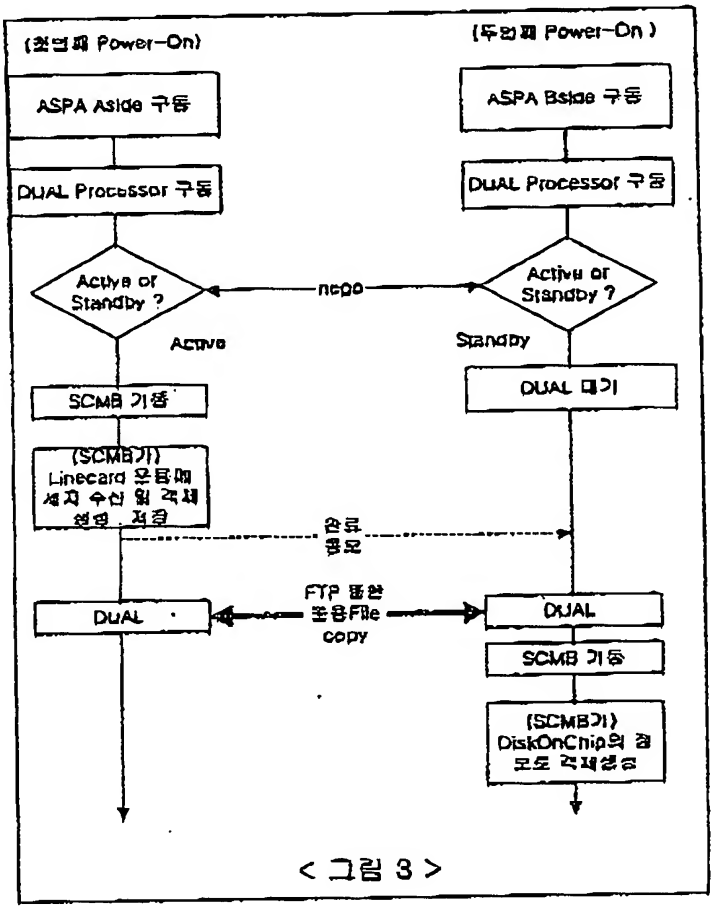
※도면의 도시된 내용에 따라 발명자가 의도했던 내용이 변할수 있으므로 본 발명서에 필요한 도면을 정확하게 표시하여 명세서 뒤에 반드시 첨부하시기 바람
※ ①전자전기회로 관련 출원은 회로도, 블록도, FLOW CHART, 특성그래프 등이 첨부되어야함.
②기계관련 출원은 전체 구조도, 상세 구조도, 투시도 등이 첨부되어야 하며,
③공정관련 출원은 전체공정 계통도와 상세공정도 및 특성그래프 등이 첨부되어야 함.
※본 항에 예를들어 "제1도는 XXX 회로도, 제2도는 ...소자의 단면도- ,"와 같이 기재바람.
※도면의 필요한 부분에 대해서는 그 명칭을 본 항 하단부 아래에 기재하시기 바람.
(<예>1:제어부 2:감지부)



<그림 1>


ASPA (ACTIVE)
ASPA (STANDBY)
memory (D-RAM)
DiskOnChip (Flash-ROM)
SCMB
DUAL
DiskOnChip (Flash-ROM)
memory (D-RAM)
DUAL
SCMB
FTP를 통한 운용File 복사

<그림 2>


(첫번째 Power-On)
(두번째 Power-On)
ASPA Aside 구동
ASPA Bside 구동
DUAL Processor 구동
DUAL Processor 구동
Active or Standby ?
Active or Standby ?
Active
Standby
SCMB 기동
DUAL 대기
FTP 통한 운용File copy
DUAL
DUAL
SCMB 기동

<그림 3>

Case No.: 05-507-B

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that.
My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

APPARATUS AND METHOD FOR DUALIZING AN ASYNCHRONOUS TRANSFER MODE (ATM) ROUTER IN A CDMA 2000 SYSTEM

the specification of which is attached hereto unless the following space is checked:

☒ was filed on July 11, 2006 as United States Application Serial Number 10/585,602.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 (including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application).

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed

Prior Foreign Application(s):

	Number	Country	Day/Month/Year Filed
1.	PCT/KR2005/000134	PCT	14 January 2005
2.	10-2004-0002973	Korea	15 January 2004

I hereby appoint the practitioners associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and I direct that all correspondence be addressed to that Customer Number.

Customer Number: 020306
Principal attorney or agent: Robert J. Irvine, III
Telephone number: 312-913-0001

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of first inventor: Tae Hong KIM

Inventor's signature: _____ Date: _____
Residence: San 136-1, Ami-ri, Bubal-eub Icheon-si, Gyeonggi-do 467-860, Republic of Korea
Citizenship: Republic of Korea
Post Office Address: San 136-1, Ami-ri, Bubal-eub Icheon-si, Gyeonggi-do 467-860, Republic of Korea

McDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

ASSIGNMENT

Case No.: 05-507-B
Inventor: Tae Hong KIM
Date of Execution
of Application:

Serial No.: 10/585,602

Filing Date: July 11, 2006

In consideration of One Dollar ($1.00) and other good and valuable considerations in hand paid, the receipt and sufficiency whereof are hereby acknowledged, the undersigned hereby assigns to:

UTSTARCOM KOREA LIMITED

its successors and assigns, the entire right, title and interest in the invention or improvements of the undersigned disclosed in an application for Letters Patent of the United States, entitled:

APPARATUS AND METHOD FOR DUALIZING AN ASYNCHRONOUS TRANSFER MODE (ATM) ROUTER IN A CDMA 2000 SYSTEM

and identified as:

Case No. 05-507-B

in the offices of MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP and in said application and any and all other applications, both United States and foreign, which the undersigned may file, either solely or jointly with others, on said invention or improvements, and in any and all Letters Patent of the United States and foreign countries, which may be obtained on any of said applications, and in any reissue or extension of such patents, and further assigns to said assignee the priority right provided by the International Convention.

The undersigned hereby authorizes and requests the Commissioner of Patents and Trademarks to issue said Letters Patent to said assignee.

The undersigned hereby authorizes and requests the attorneys of record in said application to insert in this assignment the filing date and serial number of said application when officially known, and the date of execution of the application.

The undersigned warrants himself to be the owner of the entire right, title and interest in said invention or improvements and to have the right to make this assignment, and further warrants that there are no outstanding prior assignments, licenses, or other encumbrances on the interest herein assigned.

For said considerations the undersigned hereby agrees, upon the request and at the expense of said assignee, its successors and assigns, to execute any and all divisional, continuation and substitute applications for said invention or improvements, and any necessary oath, affidavit or declaration relating thereto, and any application for the reissue or extension of any Letters Patent that may be granted upon said application, and any and all applications and other documents for Letters Patent in foreign countries on said invention or improvements, that said assignee, its successors or assigns may deem necessary or expedient, and for the said considerations the undersigned authorizes said assignee to apply for patents for said invention or improvements in its own name in such countries where such procedure is proper and

MCDONNELL BOEHNEN HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

further agrees, upon the request of said assignee, its successors and assigns, to cooperate to the best of the ability of the undersigned with said assignee, its successors and assigns, in any proceedings or transactions involving such applications or patents, including the preparation and execution of preliminary statements, giving and producing evidence, and performing any and all other acts necessary to obtain, maintain and enforce said Letters Patent, both United States and foreign, and vest all rights therein hereby conveyed in the assignee, its successors and assigns, whereby said Letters Patent will be held and enjoyed by the said assignee, its successors and assigns, to the full end of the term for which said Letters Patent will be granted, as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made.

WITNESS my hand and seal this _____ day of _____, _____.

_____

Tae Hong KIM

State of _____

County of _____

The foregoing instrument was acknowledged before me this _____ day of

_____, _____ by _____.

_____

NOTARY PUBLIC

McDONNELL BOEHNEN
HULBERT & BERGHOFF LLP
300 SOUTH WACKER DRIVE
CHICAGO, ILLINOIS 60606
TELEPHONE (312) 913-0001

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
1 September 2005 (01.09.2005)

PCT

(10) International Publication Number
WO 2005/081461 A1

(51) International Patent Classification⁷: H04L 12/28

(21) International Application Number:
PCT/KR2005/000134

(22) International Filing Date: 14 January 2005 (14.01.2005)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
10-2004-0002973 15 January 2004 (15.01.2004) KR

(71) Applicant (*for all designated States except US*): UTSTARCOM KOREA LIMITED [KR/KR]; San 136-1, Ami-ri, Bubal-eub Icheon-si, Kyonggi-do, 467-701 (KR)

(72) Inventor; and

(75) Inventor/Applicant (*for US only*): KIM, Tae Hong [KR/KR]; San 136-1, Ami-ri, Bubal-eub Icheon-si, Gyeonggi-do, 467-860 (KR).

(74) Agent: YOON, Jee Hong; Hannun Bldg. 219 Naeja-dong, Chongno-gu, Seoul, 110-053 (KR)

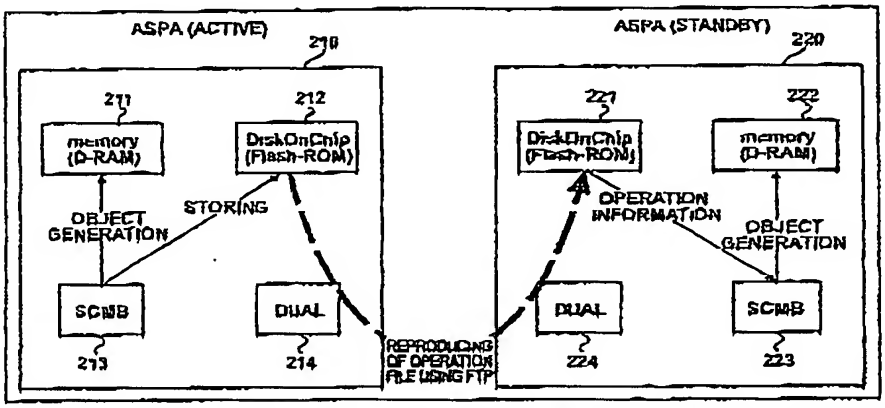
(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: APPARATUS AND METHOD FOR DUALIZING AN ASYNCHRONOUS TRANSFER MODE (ATM) ROUTER IN A CDMA2000 SYSTEM



(57) Abstract: The present invention provides an apparatus and method for dualizing an Asynchronous Transfer Mode (ATM) router in a CDMA2000 system. In a conventional wireless communication system, an ATM router in a Base Station Controller (BSC) has two separate dualized main central processing boards, which are also referred to as ADSL Subscriber Physical board Assembly (ASPA) boards. Each of the ASPA boards includes one operation and maintenance processor, which maintains configuration and operation information. One of the conventional dualized ASPA boards transmits its configuration and operation information to the other, or receives the information from the other, in the form of message. This is in order to maintain the consistency between the information of the dualized ASPA boards, as needed. Such message passing, however, is generally time consuming and may possibly create network overload. According to the invention, the dualized ASPA boards communicate the configuration and operation information with each other using a File Transfer Protocol (FTP), rather than by message passing. Accordingly, communicating the information takes relatively less time, which can considerably reduce the whole system loads and decrease the possibility of data inconsistency between the dualized ASPA boards.

WO 2005/081461 A1

APPARATUS AND METHOD FOR DUALIZING AN ASYNCHRONOUS TRANSFER MODE (ATM) ROUTER IN A CDMA2000 SYSTEM

TECHNICAL FIELD

The present invention generally relates to an apparatus and method for dualizing an Asynchronous Transfer Mode (ATM) router in a CDMA2000 system, and more particularly to an apparatus and method for maintaining consistency between configuration and operation information stored in dualized ADSL Subscriber Physical board Assembly (ASPA) boards, which are incorporated in the ATM router within a base station controller (BSC).

BACKGROUND ART

In a conventional wireless communication system, an ATM router within a BSC has dualized its main central processing unit boards (hereinafter, referred to as "ASPA boards"). This is to ensure the stability of the whole system by harmonizing the information between the dualized ASPA boards. Each ASPA board has an operation and maintenance processor (hereinafter, referred to as "SCMB"). When the ASPA is initially driven, the SCMB within the ASPA board generally receives information messages such as configuration or operation information from an ATM Card and a Switch Card managed by the ASPA. This is in order to build data associated with the respective cards. If an operational state is changed or some error occurs during the operation, the ASPA modifies these data.

With the conventional dualization technique, if the two ASPA boards are not initiated simultaneously during start-up, then each of the ASPA boards may receive and maintain different information messages from the ATM or Switch Card, especially when the operation state of any of the cards is changed during the interval between the initiations. This may result in some problems in maintaining the dualized structure. In order to eliminate such data discrepancy, the two SCMBs in the ASPA boards communicate messages with each other. However, this may cause operational overload in the ASPA boards, as well as another discrepancy due to the state change during the communication.

DISCLOSURE OF THE INVENTION

It is, therefore, an object of the present invention to provide an apparatus and method for maintaining consistency between dualized ASPA boards within an ATM router in a CDMA system. This is accomplished by communicating

configuration and operation information using a file transfer protocol (FTP) instead of a message-passing scheme.

In accordance with one aspect of the invention, there is provided an apparatus for dualizing an Asynchronous Transfer Mode (ATM) router in a CDMA2000 system, the apparatus comprising: a first ADSL Subscriber Physical board Assembly (ASPA) board; a second ASPA board, wherein each of the two ASPA boards comprises a disk-on-chip for storing configuration and operation information; a memory for storing an executable format of an object associated with the configuration and operation information; a dualized processor for transmitting and receiving the configuration and operation information using File Transfer Protocol (FTP); and a operation and maintenance processor for storing the configuration and operation information in the disk-on-chip and generating an object executable on the memory from the information stored in the disk-on-chip.

In accordance with another aspect of the invention, there is provided a method for dualizing an ATM router in a CDMA2000 system, the method comprising the steps of: at a dualized processor, determining in which of three states an ASPA board is, wherein the three states are Single, Active and Standby, respectively; if it is determined that the ASPA board is in the Single or Active state, at the dualized processor, initiating an operation and maintenance processor; at the operation and maintenance processor, receiving messages from managed cards, generating an configuration and operation information therefrom and storing the configuration and operation information in a disk-on-chip; and at the operation and maintenance processor, generating an object executable on a memory from the configuration and operation information and notifying the other ASPA board of the object generation when generating the object is completed, or if it is determined that the ASPA board is in the Standby state, at the dualized processor, waiting until receiving the notification of the generation is completed; at the dualized processor, upon receiving the notification, receiving the configuration and operation information stored in the disk-on-chip of the other ASPA board using a FTP, and storing the information in a disk-on-chip of the ASPA board where the dualized processor is mounted; at the dualized processor, initiating an operation and maintenance processor; and at the operation and maintenance processor, generating an object executable on a memory from the configuration and operation information.

BRIEF DESCRIPTION OF DRAWINGS

Fig. 1 is a structural diagram illustrating a dualization configuration of an

ATM router in a conventional wireless communication system.

Fig. 2 is a structural diagram illustrating a dualization configuration of an ATM router in a CDMA2000 system according to an embodiment of the present invention

Fig. 3 is a flow chart of a method for dualizing an ATM router in CDMA2000 system according to an embodiment of the present invention.

BEST MODE FOR CARRYING OUT THE INVENTION

In the disclosure below, a preferred embodiment of the present invention will be described in detail with reference to the accompanying drawings.

Fig. 1 is a structural diagram illustrating a dualization configuration of an ATM router in a conventional wireless communication system. A first ASPA 110 and a second ASPA 120 receive information messages from ATM Card 130, Switch Card 140 and Clock Card 150 respectively to build data associated with the cards. A first SCMB 111 and a second SCMB 112 communicate their own configuration and operation information in the form of message with each other to maintain the dualization structure by harmonizing the information.

Fig. 2 is a structural diagram illustrating a dualization configuration of an ATM router in a CDMA2000 system in accordance with one embodiment of the present invention. In the ATM router within the dualized wireless communication system, an ASPA board has one of three states: Single, Active and Standby. The Single state indicates that the only one of the two ASPA boards has been powered up. When both of the two ASPA boards are powered up, a running board of the two ASPA boards has the Active state and the other board on standby has the Standby state. Each ASPA board includes memories 211 and 221, disk-on-chips 212 and 222, SCMBs 213 and 223, and dualized processors 214 and 224. Disk-on-chips 212 and 222 are non-volatile memories (e.g., flash ROM) for storing the configuration and operation information of the respective ASPA boards. Dualized processors 214 and 224 are in charge of dualizing the ASPA boards. More specifically, in order to maintain the consistency between the information of the dualized boards, a dualized processor embedded in a ASPA board, which is either first powered up or first used as an Active board when the two boards are powered up simultaneously, transmits at one time the configuration and operation information stored on the disk-on-chip to the dualized processor within the other ASPA board using a file transfer protocol (FTP). Then, the receiving processor reproduces the received information into the disk-on-chip and marks the information update with a

global variable. Compared with a message-passing scheme, communicating the information at one time using the FTP is much less time-consuming and thus can considerably reduce the whole system loads. If the global variable indicates that the information has been received and stored into the disk-on-chip using the FTP, SCMB 213 or 223, which is operation and maintenance processor for managing and updating the configuration and operation information in the ASPA board, generates an object in the memory based on the configuration and operation information reproduced at the disk-on-chip. Otherwise, SCMB 213 or 223 builds the configuration and operation information based on the received message from the managed card such as the ATM Card, the Switch Card and the Clock Card, as described below.

Fig. 3 is a flow chart of a method for dualizing an ATM router in CDMA2000 system according to an embodiment of the present invention. When an ASPA is powered up into operation, a plurality of processors within the ASPA are generated and executed sequentially on a priority basis, i.e., a previously generated processor generates another processor with the next priority. First, in blocks S11 and S22, the dualized processors are initially initiated. In blocks S13 and S23, the dualized processor determines in which of the three states the ASPA board remains, the three states being Single, Active and Standby, respectively. If the ASPA board is in the Single state indicating that only one of the two ASPA boards is initiated, there is no valid operation information on the disk-on-chip within the other ASPA. Thus, the ASPA board puts the SCMB into operation (block S14) and directs it to receive and store the internal information from the managed cards, such as the ATM Card, the Switch Card, the Clock Card, at the disk-on-chip to generate an executable object on the memory from the information (block S15). Similarly, if the ASPA board is in the Active state, i.e., the ASPA board is to be first used of the two dualized boards powered up simultaneously, then the ASPA board puts the SCMB into operation (block S14) and generates an object on the memory from the operation message received from the managed cards (block S15). On the other hand, if the ASPA board is in the Standby state, it waits until the other ASPA board in the Active or Single state generates the configuration and operation information (block S24). When the object is completely generated (block S15), the Active or Single ASPA issues a notification of the object generation to the Standby ASPA board. Upon receiving the notification, the dualized processor within the standby ASPA board receives the generated configuration and operation information from the disk-on-chip within the Active or Single ASPA board using the FTP (block S25). The ASPA

board in the Single or Active state employs a FTP server to transmit the configuration and operation information stored at its disk-on-chip by the FTP. The dualized processor in the Standby ASPA board, when receiving the configuration and operation information, writes the information in the disk-on-chip and then initiates the SCMB after updating the relevant global variable to indicate that the received configuration and informational information by the FTP has been written in the disk-on-chip (block S26). In block S27, if the global variable indicates that the received configuration and operation information by the FTP has been written in the disk-on-chip, the SCMB reads the information in the disk-on-chip during the start-up to generate the object associated with the information on the memory (block S27).

With the dualized ASPA boards working, if one of the ASPA boards is unmounted or shut down due to some operational errors such as an interruption of the power supply and a short circuit, the other board gets into the Single state. Further, if the stalled ASPA board gets restarted, the ASPA board in the Single state gets into the Active and the restarted ASPA board into the Standby state. In other words, when the state of the working ASPA boards is changed, a dualized processor within the Standby ASPA board receives the configuration and operation information from the Active ASPA board using the FTP to generate the object, as it does during start-up.

INDUSTRIAL APPLICABILITY

As described above, according to the present invention, the dualized ASPA boards communicate the configuration and operation information with each other using the FTP instead of a message-passing scheme. This can considerably reduce the system loads and decrease the possibility of data inconsistency between the dualized ASPA boards. As such, the time needed to harmonize the configuration and operation information can be shortened in inverse proportion to the file transmission rate. Furthermore, when the configuration and operation information needs to be extended, only the data structure thereof has to be modified without additional messages communicated, which may facilitate the maintenance of the whole system.

CLAIMS

1. An apparatus for dualizing an Asynchronous Transfer Mode (ATM) router in a CDMA2000 system, the apparatus comprising:

a first ADSL Subscriber Physical board Assembly (ASPA) board; and

a second ASPA board;

wherein the first ASPA board comprises a first disk-on-chip for storing configuration and operation information; a first memory for storing an executable format of an object associated with the configuration and operation information; a first dualized processor for transmitting the configuration and operation information to the second ASPA board or receiving the configuration and operation information form the second ASPA board using File Transfer Protocol (FTP); and a first operation and maintenance processor for storing the configuration and operation information in the first disk-on-chip and generating an object executable on the memory from the information stored in the first disk-on-chip,

and wherein the second ASPA board comprises a second disk-on-chip for storing configuration and operation information; a second memory for storing an executable format of an object associated with the configuration and operation information; a second dualized processor for transmitting the configuration and operation information to the first ASPA board or receiving the configuration and operation information from the first ASPA board using the FTP; and a second operation and maintenance processor for storing the configuration and operation information in the second disk-on-chip and generating an object executable on the memory from the information stored in the second disk-on-chip.

2. A method for dualizing an ATM router in a CDMA2000 system, the method comprising the steps of:

at a dualized processor, determining in which of three states an ASPA board is, wherein the three states are Single, Active and Standby;

if it is determined that the ASPA board is in the Single or Active state,

at the dualized processor, initiating an operation and maintenance processor;

at the operation and maintenance processor, receiving messages from managed cards, generating an configuration and operation information therefrom and storing the configuration and operation information in a disk-on-chip; and

at the operation and maintenance processor, generating an object executable on a memory from the configuration and operation information and notifying the other ASPA board of the object generation when generating the object is completed,

or if it is determined that the ASPA board is in the Standby state,

at the dualized processor, waiting until receiving the notification of the generation completed;

at the dualized processor, upon receiving the notification, receiving the configuration and operation information stored in the disk-on-chip of the other ASPA board using a FTP, and storing the information in a disk-on-chip of the ASPA board where the dualized processor is mounted;

at the dualized processor, initiating an operation and maintenance processor; and

at the operation and maintenance processor, generating an object executable on a memory from the configuration and operation information.

시권을 가질 수 없다(제2항)고 규정하고 있고, 피고회사가 원고로부터 제2발명에 관한 권리를 승계한 1994. 10. 13.로부터 4개월이 경과한 1995. 5. 11.에야 위 발명에 관한 특허를 출원한 사실은 앞에서 본 바와 같다.

그러나 가사 위 법률규정에 의하여 제2발명에 관한 양도계약이 무효가 되어 피고회사가 특허를 받을 권리를 가지지 아니함에도 불구하고 그 명의로 특허등록을 마쳤다 하더라도 원고가 그와 같은 사유를 들어 특허무효심판을 청구함은 별론으로 하고 특허무효심결이 확정되기 전에는 피고 명의로 등록된 특허권의 무효를 주장할 수는 없는 것이므로 피고는 특허권자로서 적법하게 그 발명을 실시할 권리가 있고, 또한 원고가 자기 명의로 특허등록을 받지 아니한 이상 피고회사가 위 발명을 실시함에 있어 원고의 동의를 얻어야 한다고 볼 수도 없으므로, 원고의 위 주장은 이유 없다.

SCHEDULE A

	1	2	3	4	5	6	7	8	9
	MBHB Reference No.	Title	Inventor(s)	U.S. Application No.	U.S. Filing Date	Korean Application No.	Filing Date (Korean Application)	PCT Application No.	Filing Date PCT National Phase
1	05-386-B	Method For Stabilizing BTS Using E1 Trunk Board Duplexing Of BSC	Se Yeon KIM	10/545,922	August 17, 2005	2003-0018549	March 25, 2003	PCT/KR2004/00645	March 24, 2004
2	05-390-B	Method For Optimizing A DSP Input Clock Using A Comparing/Analyzing Circuit	Seong Chul SHIN	10/545,505	August 12, 2005	2003-0018553	March 25, 2003	PCT/KR2004/00655	March 24, 2004
3	05-392-B	Method For Trunk Line Duplexing Protection Using A Hardware Watchdog	Yeong Weon JUNG	10/545,895	August 17, 2005	2003-0018554	March 25, 2003	PCT/KR2004/00654	March 24, 2004
4	05-426-B	Device for Implementing a RNC Using LVDS	Kyung Hwan AN	10/559,738	December 6, 2005	2003-0051165	July 24, 2003	PCT/KR2004/01858	July 23, 2004
5	05-426-C	Device for Implementing a RNC Using LVDS	Kyung Hwan AN	11/534,965	September 25, 2006	2003-0051165	July 24, 2003	PCT/KR2004/01858	July 23, 2004
6	05-429-B	Method of Allocating Links in a 1X EVDO System	Kye Chol CHO	10/560,297	December 12, 2005	2003-0051466	July 25, 2003	PCT/KR2004/01880	July 26, 2004
7	05-432-B	Method for Downloading a Single Firmware Image File to Client Systems Having Different CPU Modules	Chan Soo PARK	10/559,225	December 6, 2005	2003-0051153	July 24, 2003	PCT/KR2004/01853	July 23, 2004
8	05-432-C	Method for Downloading a Single Firmware Image File to Client Systems Having Different CPU Modules	Chan Soo PARK	11/534,970	September 25, 2006	2003-0051153	July 24, 2003	PCT/KR2004/01853	July 23, 2004

SCHEDULE A

	MBHB Reference No.	Title	Inventor(s)	U.S. Application No.	U.S. Filing Date	Korean Application No.	Filing Date (Korean Application)	PCT Application No.	Filing Date PCT National Phase
9	05-433-B	Method for Unifying Operations of Boards by Using Logical Addresses Thereof	Yoon Mi HWANG	10/559,235	December 6, 2005	2003-0051155	July 24, 2003	PCT/KR2004/01855	July 23, 2004
10	05-433-C	Method for Unifying Operations of Boards by Using Logical Addresses Thereof	Yoon Mi HWANG	11/534,960	September 25, 2006	2003-0051155	July 24, 2003	PCT/KR2004/01855	July 23, 2004
11	05-434-B	Method for Establishing an ATM Traffic Channel Path Between a BSC and a BTS in an EV-DO System	Woo Seog KOO	10/560,142	December 9, 2005	2003-0051157	July 24, 2003	PCT/KR2004/001856	July 23, 2004
12	05-438-B	ATM Switch for use in W-CDMA	Cheol Hyun JANG	10/545,578	August 16, 2005	2003-0018557	March 25, 2003	PCT/KR2004/00658	March 25, 2004
13	05-439-B	Remote Unit for Adding Frequency Assignments to a Separation-Type Base Transceiver Station	Jae Ick LEE	10/556,267	November 14, 2005	2003-0034799	May 30, 2003	PCT/KR2004/01276	May 28, 2004
14	05-476-C	Apparatus and Method for Tracking the Position/Object Using a Mobile Communication Network	Choon Geun CHO	10/567,529	February 7, 2006	2003-0066875	September 26, 2003	PCT/KR2004/02466	September 24, 2004
15	05-496-C	Method of Controlling Power in a CDMA-2000 System	Tae Ik SONG	10/568,234	February 14, 2006	2003-0067736	September 30, 2003	PCT/KR2004/02469	September 24, 2004
16	05-497-C	Method of Controlling Power in a W-CDMA Mobile Communication System	Dong Keun KIM	10/569,046	February 22, 2006	2003-0067737	September 30, 2003	PCT/KR2004/02470	September 24, 2004

SCHEDULE A

	MBHB Reference No.	Title	Inventor(s)	U.S. Application No.	U.S. Filing Date	Korean Application No.	Filing Date (Korean Application)	PCT Application No.	Filing Date PCT National Phase
17	05-498-C	Method of Controlling Data Rate for a Forward Data Service in a CDMA 2000-1X System	Jung Han LEE	10/569,041	February 22, 2006	2003-0067738	September 30, 2003	PCT/KR2004/02471	September 24, 2004
18	05-500-B	ATM Switched Router for Transmitting IP Packet Data	Jung Hee PARK	10/585,586	July 11, 2006	2004-0002981	January 15, 2004	PCT/KR2005/00133	January 14, 2005
19	05-507-B	Apparatus and Method for Dualizing an Asynchronous Transfer Mode (ATM) Router In a CDMA2000 System	Tae Hong KIM	10/585,602	July 11, 2006	2004-0002973	January 15, 2004	PCT/KR2005/00134	January 14, 2005
20	05-509-B	Method for Correcting Time Data in a Network Management Application Using a SNMP	Sang Dae PARK	10/586,086	July 13, 2006	2004-0002979	January 15, 2004	PCT/KR2005/00138	January 14, 2005
21	05-511-B	Apparatus and Method for Sensing Faults of Application Programs in a CDMA System	Ki Sung LYU	10/586,289	July 13, 2006	2004-0002980	January 15, 2004	PCT/KR2005/00139	January 14, 2005
22	05-517-B	Automatic Update System and Method for Using a META MIB	Young Jin KIM	10/586,087	July 13, 2006	2004-0002982	January 15, 2004	PCT/KR2005/00140	January 14, 2005

SCHEDULE A

	MBHB Reference No.	Title	Inventor(s)	U.S. Application No.	U.S. Filing Date	Korean Application No.	Filing Date (Korean Application)	PCT Application No.	Filing Date PCT National Phase
23	05-518-B	Structure of a Management Information Base Communicated Between a Network Management System and an Agent of a Network Element	Kwang Seok KANG	10/585,838	July 12, 2006	2004-0002983	January 15, 2004	PCT/KR2005/00141	January 14, 2005
24	05-595-B	Method of Distributing Network Traffic in a Mobile Communication System	Hyun Young SHIN	10/556,924	November 14, 2005	2003-0035283	June 2, 2003	PCT/KR2004/01310	June 2, 2004
25	05-597-B	System and Method for Tracking Position of a Mobile Unit Using Beacons in a Mobile Communications System	June Man KIM	10/560,664	December 13, 2005	2003-0050916	July 24, 2003	PCT/KR2004/01851	July 23, 2004
26	05-615-B	Method for Call Completion Service	Sea Gon CHUN	10/556,274	November 14, 2005	2003-0034808	May 30, 2003	PCT/KR2004/01274	May 28, 2004
27	05-616-B	Method for Automatically Setting a Frequency of a Base Station in a CDMA-2000 System	Ju Hyun BAN; Sang Won SON	10/561,351	December 19, 2005	2003-0051154	July 24, 2003	PCT/KR2004/01854	July 23, 2004